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Southern Medical Journal

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Southern Medical Association, Thirty-Third Annual Meeting, Memphis, Tennessee, November 21-24

TABLE OF CONTENTS

Picture of Dr. Walter E. Vest, President, Southern Medical Association Insert

Ars Medica and Ars Poetica. J. W. Jervey, Greenville, South Carolina ... 1

The Pathology of Human Brucellosis: Report of Four Cases with One Autopsy. Philip B. Parsons and Mary A. Poston, Durham, North Carolina 7

Discussed by Roy R. Kracke, Emory University, Ga.; Wiley D. Forbus, Durham, N. C.; J. R. Schenken, New Orleans, La.

Use of Stainless Steel Rods to Canalize Flexor Tendon Sheaths. H. vH. Thatcher, Portland, Oregon ... 13

Discussed by Paul D. Abramson, Shreveport, Louisiana.

Analgesia in Labor: Modified Gwathmey Method. C. O. McCormick, Indianapolis, Indiana ... 19

Blood Studies in Private Obstetrical Patients: Report of 1,000 Consecutive Cases. J. B. Eskridge, Jr., and Milton J. Serwer, Oklahoma City, Oklahoma ... 24

Primary Carcinoma of the Bronchus. Ira H. Lockwood, Kansas City, Missouri ... 30

The Therapeutic Use of Helium. C. W. Metz, A. A. Wearner and A. E. Evans, Denver, Colorado ... 34

Discussed by H. E. Doudna, Oklahoma City, Oklahoma; R. F. Bonham, Houston, Tex.

Treatment of Pellagra with Special Reference to the Use of Nicotinic Acid. Julian M. Ruffin and David T. Smith, Durham, North Carolina 40

Discussed by William Bennett Bean, Cincinnati, Ohio.

The Relative Incidence of Hyperplasia of the Prostate in the White and Colored Races in Louisiana: An Analysis of 325 Glands Removed at Operation. Rigney D'Aunoy, John R. Schenken and Edward L. Burns, New Orleans, Louisiana ... 47

Discussed by W. F. Keller, Oklahoma City, Oklahoma.

The Study of the Endometrium as an Indicator. Robert A. Ross, Durham, North Carolina ... 52

General Aspects of Automobile Injuries. Charles S. Venable, San Antonio, Texas ... 56

Neurologic Signs in Trauma of the Brain and Spinal Cord. R. Glen Spurling and F. Keith Bradford, Louisville, Kentucky ... 59

Discussed by Harry Wilkins, Oklahoma City, Okla.; Earl D. McBride, Oklahoma City, Oklahoma.

Treatment of Ununited Fracture of the Neck of the Femur. Paul C. Colonna, Oklahoma City, Oklahoma ... 65

Concluded on Next Page

TABLE OF CONTENTS—Continued

The Role of Plastic Surgery in the Treatment of Malignancies About the Face. John F. Burton, Oklahoma City, Oklahoma 67

Etiology and Treatment of Strangulated, Thromboscd, Infected and Gangrenous Internal Hemorrhoids. Marion C. Pruitt, Atlanta, Georgia 68

Pathology of Complicated Cataract. Bernard Samuels, New York, New York 70

Discussed by B. Y. Alvis, St. Louis, Mo.; Ray K. Daily, Houston, Tex.

Retinoblastoma. John F. Townsend, Charleston, South Carolina 75

Postgraduate Medical Education in the South and the Contribution of the Southern Medical Association. John B. Youmans, Nashville, Tennessee 76

Is Revision of the Medical Curriculum Needed to Meet the Demands of Industry? George A. Traylor, Augusta, Georgia 80

Looking Forward. W. C. Williams, Nashville, Tennessee 82

The Relationship of Obstructive Lesions to Resistant Urinary Infections. Edgar G. Ballenger, Omar F. Elder, Harold P. McDonald and Reese C. Coleman, Jr., Atlanta, Georgia 85

EDITORIALS 89

Walter Edward Vest, President of the Southern Medical Association
Anemia in Pregnancy
Gleanings from Recent Journals
Twenty-Five Years Ago

BOOK REVIEWS ..... 92 and 123

OFFICERS, Southern Medical Association, and organizations meeting conjointly 94

MINUTES, Southern Medical Association, Thirty-Second Annual Meeting, Oklahoma City, Oklahoma, November 15-18, 1938 95

SOUTHERN MEDICAL NEWS 123

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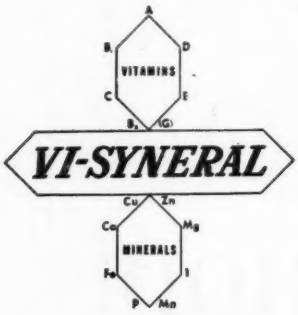

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1. Report of League of Nations Health Comm., Dec. 6, 1935.
2. Eddy, Walter E. (Special research report on Vi-Syneral).
3. Privatera, A. T., Arch. of Ped., April, 1938.

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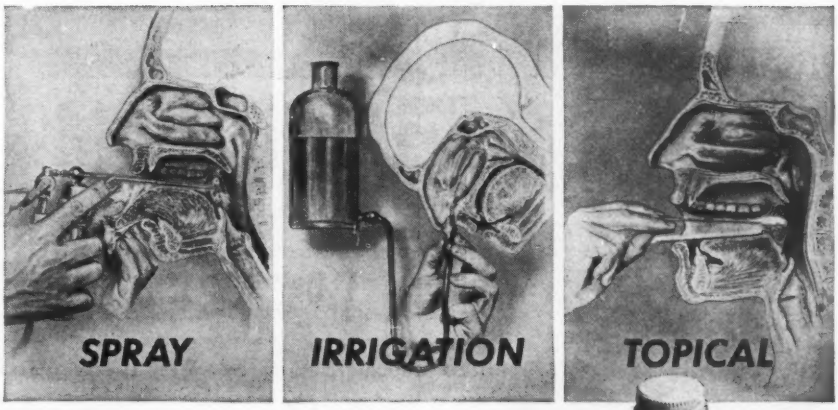

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—IRVING, NEW YORK STATE JOURNAL OF MEDICINE, JAN. 15, 1938

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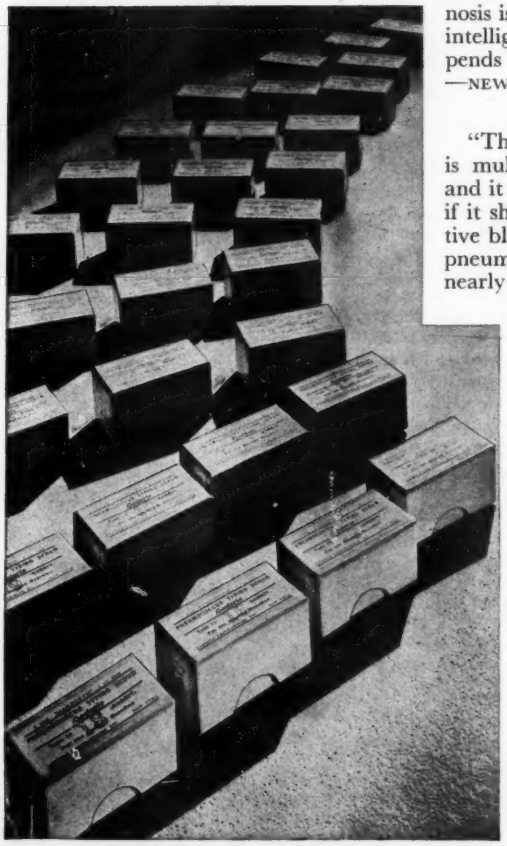

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—JOURNAL OF PEDIATRICS VOL. 13:278(AUG.)1938.

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—TOOMEY: JOURNAL OF PEDIATRICS VOL. 5: No. 3. (SEPT.) 1934.

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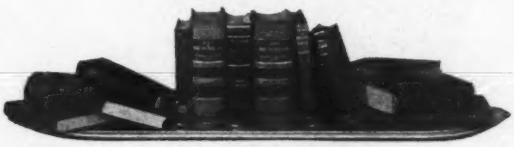

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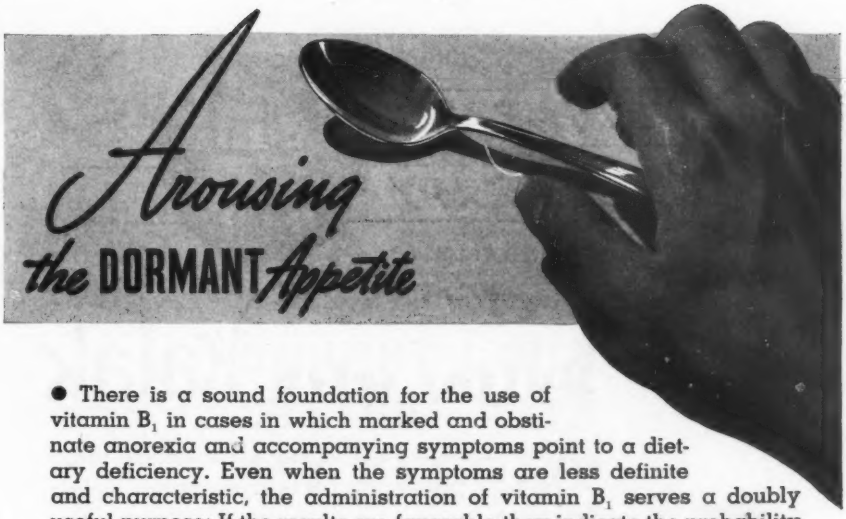

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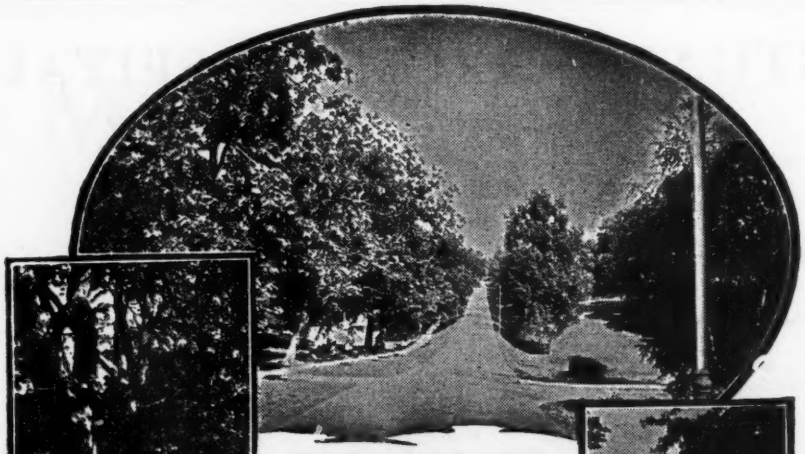

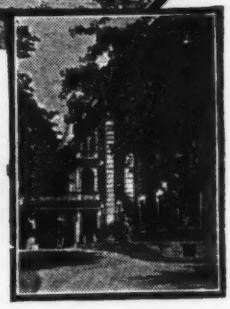

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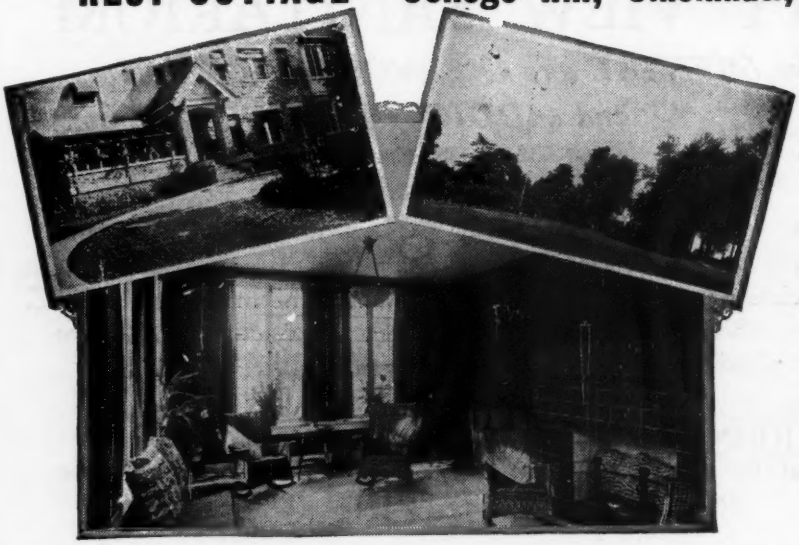

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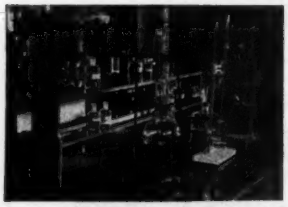

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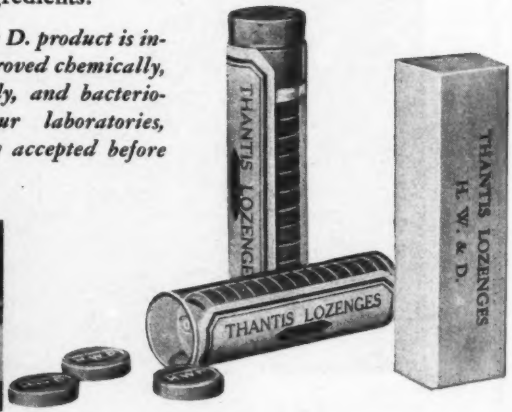

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JOURNAL OF THE SOUTHERN MEDICAL ASSOCIATION

PUBLISHED MONTHLY BY THE SOUTHERN MEDICAL ASSOCIATION AT BIRMINGHAM, ALA.

Volume 32 JANUARY 1939 Number 1

ARS MEDICA AND ARS POETICA*

By J. W. JERVEY, M.D.
Greenville, South Carolina

Art means skill, dexterity and the employment of a given means to effect a purpose. This is the sense in which at this time we will consider the art of medicine and the art of poetry. In this sense art is opposed to science, for in art, it has been said, truth is the means to an end; in science it is only the end. So science is necessarily limited, but art is bounded only by the imagination of its practitioners.

Apollo, son of Jupiter, was the leader of the Muses, god of music, poetry and healing, and patron of these arts. He was the father of Aesculapius, to whom he granted his art of healing, and one who is known in Greek mythology as the god of medicine. So we see that there was a very early relationship between medicine and poetry.

A few years ago Lord Moynihan, delivering a Linacre lecture (Cambridge), chose for his subject "Medical Truants." He tells us of doctors who were artists, architects, engineers, musicians, poets, etc., all of which may be classified as of the arts. With him and others we shall visit this evening some of these truants of poetic bent. Even from a limited bibliography we find the list too long for even casual mention of all these geniuses. So we may only run over briefly the more outstanding ones for the purpose of impressing on our minds the not infrequent marriage of the arts. And let us remember here in the beginning that poetry lies in the imagery and imagination of its conception, and only esthetically in the form of its presentation.

Dr. C. Jeff Miller[1] suggests that

"in early days when the basis of medicine was less scientific than it is at present, inspiration rather than patient research was likely depended upon to supply it with its facts, for which reason medical treatises have often assumed a poetic form."

Indeed, during the old Greek and Roman times, as Charles L. Dana has pointed out, the writing of verse by doctors was a fairly common thing.

Matthew Arnold, in his "Essays and Criticism," insisted that without poetry science would be incomplete. Medical men are more likely to gain by the culture and wide vistas opened by poetry and letters than are poets by a scientific or medical training.

Like music, poetry has an effect on the mind and exerts a powerful influence for good, and it has been suggested that in mental disorders it might be used as much for prevention as for cure, but unfortunately we, as a profession

"are more accustomed to advising people to eat lettuces than to read poetry."

And it is true that active composition of verse is a means of relieving an over-burdened mind by providing a safe outlet for emotions.

Ernest Weinfeld[2] refers to ancient, medieval and modern medical men who were known as poets, remarking that as early as about 150 B. C. Nicander was the physician-poet, whose poems are "Theriaca" and "Alexi Pharmaca." He gives a list of physician-poets, many of whom have been little heard from, but on the other hand many of outstanding importance who were both poets and men of medicine. Some of those not elsewhere mentioned in this article were the famous Edward Jenner, who wrote occasionally in verse.

It might be observed here that St. Luke, the apostle of the New Testament, was a Greek slave before his conversion to Christianity, educated at Alexandria. He was a physician, musician, painter and poet. The Gospel of St. Luke, of the Scriptures, is usually regarded as one of the most beautiful books ever written, and while

* President's Address, Southern Medical Association, Thirty-Second Annual Meeting, Oklahoma City, Oklahoma, November 15-18, 1938.

it is in the form of prose, it may be regarded as the essence of poetry.

Lord Moynihan[3], of Leeds, reminds us that among medical poets worthy of mention perhaps the earliest is Empedocles (500 B. C.).

It must be remembered, parenthetically, that the word poetry does not always connotate lyrical composition or versification. There has been much poetry that has been recorded as prose, as for instance, and above referred to, the scriptural gospel of St. Luke, himself, interestingly enough, having been known as "the beloved physician." Then, too, one can readily see in the universally recognized Hippocratic Oath of the father of medicine, the fundamental elements of pure poetry. In other words, as noted above, poetry is essentially the expression of the ideal of the artistic imagination, the more beautifully expressed the more forceful and convincing, but not necessarily in lyrical form.

One of the chief physicians of his day was Thomas Lodge (1558 to 1625). Apparently much like the career of the late Oliver Goldsmith, he had many vagaries which seemed to have alienated the affections of his family and his name was omitted from his father's will. He has been described as one who was, "Hunted by the heavy hand of God," and became little better than a vagrant, "looser than victory, lighter than vanity itself." His pen was often rancorous. But one observes that Lodge is most worthy of remembrance as a lyrical poet, some of his lyrics being regarded as the finest in our language.

Sir Humphrey Rolleston[4] says that the most interesting of Lodge's plays is "Rosalynde: Euphues Golden Legacy" (1590), which provided young Shakespeare, who was then about 26, with the plot of "As You Like It."

Sir Richard Blackmore (1650 to 1729) was graduated in medicine at Padua. His work, "The Creation," was most praised by Addison. His poems were written as he traveled on his rounds. He said:

"In leisure hours in epic song he deals,
Writes to the rumblings of his coach's wheels."

That vividly approaches true onomatopoeia!

Moynihan also speaks of Sir Samuel Garth, a Yorkshire man who died in 1719, saying that he was of high repute in his day, both as physician and as poet. His poem, "Dispensary,"

"To die is landing on some distant shore
Where tempests never beat nor billows roar"

is well known. And we are told by Sir Humphrey Rolleston that more than a century after the appearance of this work (1699), medico-poetical satire of the quarrel between the college of physicians and the apothecaries, Sir Edmund Goss optimistically said:

"It gave the *coup de grace* to the popular belief that the pursuits of poetry and of medical practice were incompatible."

Fracastorio, who died about the middle of the Sixteenth Century, was a physician, geologist, physicist, astronomer, pathologist and poet. In his poem, "Syphilis Sive Morbus Gallicus," which was published in Venice in 1530 (his collected works in 1555), the word syphilis was given to the medical profession, and he is known in history as originating the theory of infection by micro-organisms in so-called infectious diseases.

Ambroise Paré (1510 to 1590) wrote sonnets and short verses in his various works.

Sir Humphrey Rolleston concluded his essay on "Poetry in Physics" in these words:

"The reading of poetry is a help, comfort and means of culture in our hours of ease, and often of disease; and as a hobby the writing of verse is a happy issue for our emotions, for there is no greater pleasure than creating something. * * * More ambitious aims are hardly likely to tempt us, for it is fairly obvious that as medicine and poetry are both jealous mistresses, a busy doctor can hardly hope ever to be a Tennyson or a Swinburne."

Sir William Osler has observed that Kaled Hillier Parry, "The Famous Old Bath Physician," once remarked:

"What is very hard is that a man should be esteemed as a friend, acknowledged to be a man of parts, but none of his friends think of employing him as a professional. This I can hardly explain, unless by the old saying: 'He is too good a poet to be a good physician.'"

Yet it has been asked,

"Is there any inherent incompatibility between the lancet and the lyre?"

E. P. Scarlett[5] says that Thomas Campion is certainly of the select few among the great poet-physicians. Campion was born about the middle of the Sixteenth Century and died in 1619, poet, musician and doctor of medicine. He had a most successful practice in London and was a cultured man. His poetical

work was completely forgotten until about forty or fifty years ago, when it was rescued from oblivion and since that time Campion's fame has grown steadily. His lyrics are perfect and exquisite examples of their kind, completely satisfying the relation between music and poetry.

W. Pelton Tew[6] recalls that Sir Thomas Browne was born in London in 1605, of a good and prosperous family. In 1633 he acquired the title of doctor of medicine at Leyden. In the same year he returned to London and began practicing near Halifax. In 1637 he got his M. D. degree at Oxford and settled at Norwich, and remained there until his death 45 years later.

He made an extremely happy marriage in 1641 and from that time his life was placid and beautifully filled with his family life, the writing of scientific papers and the practice of medicine. His most distinguished work of course was "Religio Medici," written in 1635. It has been translated into many languages and is written in a style that is chiefly prose, most closely resembling that of poetry. For instance:

"I could never divide myself from any man upon the difference of an opinion, or be angry with his judgment in not agreeing with me on that from which perhaps within a few days I should dissent myself."

One with closed eyes might suppose *that* a quotation from one of the world's greatest poets, St. Luke, the Great Physician.

Again Sir Thomas says:

"We term sleep a death: and yet it is waking that kills us and destroys those spirits that are the cause of life."

Also:

"There is no road or ready way to virtue."

Oliver Goldsmith was born in Ireland in 1728. As a child and schoolboy his life was unsatisfactory, and finally his uncle sent him to Edinburgh to study medicine in 1752. He spent his time loafing and gambling and made no use of the opportunities presented to him by his relatives. In 1754 he went to Leyden and pretended to study medicine. He left for a hike across the continent and next we find him "playing a flute and singing Irish songs from door to door for a livelihood." (Come to think of it, playing a flute and singing a song at the same time would appear to be quite an accomplishment!) He came home with a somewhat mythical degree from Leyden in 1756 and became an assistant to an apothecary in London, which at least gave him his bread and butter. During this time he began to write, and in 1761 Johnson was attracted by his writings and made his personal acquaintance, and he soon became a member of the famous Literary Club, which included Johnson, Reynolds, Boswell, Garrick and Burke. The remainder of Goldsmith's life was devoted to writing. He died in 1774.

Goldsmith's great play, "She Stoops to Conquer," contains some of the finest of poetry and is one of the greatest of plays. Perhaps his best known works outside of this are "The Vicar of Wakefield" and "The Deserted Village," the latter of which contained many memorable quips that have become part of the daily speech of the English speaking world. For instance:

"When lovely woman stoops to folly."

"A man he was to all the country dear,
"And passing rich with forty pounds a year."

"And fools who came to scoff remained to pray."

"And still they gazed, and still the wonder grew
How one small head could carry all he knew."

"Ill fares the land, to hastening ills a prey,
Where wealth accumulates and men decay."

"For he who fights and runs away
May live to fight another day."

"The loud laugh that speaks the vacant mind,"

and many others.

"Art is long; life short; judgment difficult, and opportunity transient."

so said Johann Wolfgang Goethe. Born in 1749, he died in 1832. It is said that the most invulnerable of Goethe's writings are his lyrical poems, against which the best of criticism can bring nothing and they need no interpretation. Naturally one regards Goethe's best known single work as "Faust." He was continually making additions to this work, so we find in it the impressions of Goethe during youth, manhood and old age. He practiced medicine but he was really interested in pure science and particularly interested in zoology, having written several articles describing the bone anatomy of some of the lower animals, and it is likely that he studied medicine to give him a better insight into the requirements of his compositions.

Johann Christoph Friedrich Schiller has been called the greatest of medical poets. He was born in Bavaria in 1759. His father was a barber-surgeon to a Bavarian regiment and his mother the daughter of an innkeeper. They designed their son for a career in theology, but he abandoned it for the law and that in turn for medicine. In the end he turned to lit-

erature. The world is familiar with his compositions. Said he:

"Against stupidity the very gods themselves contend in vain."

Schiller actually practiced medicine and was an assistant in the Grenadier Regiment, with a salary of $7.50 per month. He died at the age of 46 from bronchial asthma.

Samuel Taylor Coleridge was born in England in 1772, the ninth and youngest son of the vicar of the parish. When he grew up he had apparently domestic difficulties which caused him to resort to the opium habit, although he was then under the influence of the great Wordsworth. From this time he led a wandering life, his resources always small. Later he was granted a private and royal pension. It has been remarked that it is strange that even though a drug addict and in constant difficulties, he was able to produce the poetry that he did. Who has not read with shuddering joy the "Rhyme of the Ancient Mariner," or smiled at the naivete of the lovely "Christabel"?

"He prayeth best who loveth best
All things both great and small."

Dr. Miller rather amusingly observes that so impassioned at times become the views of physicians that John Armstrong, in his poem, "The Economy of Life,"

"Hymned the praises of Venus in strains so warm that they dissolved away his practice."

He also tells us of one John Wolcott who wavered between medicine and the church, and finally gave up both for literature. He published his verses under the pseudonym of Peter Pindar, but he was one of the earliest who had sense enough to say:

"Watch nature and give her a shove on the back
If she seems inclined to do right."

Humphrey Milford[7] and F. N. Doubleday[8] have written about John Keats as a physician and poet. All the world knows Keats and his poetry. He was a poor lad, educated in a private school, and the only other place of education was his study of medicine at Guy's Hospital. In spite of his insignificant physique, he made a reputation for himself as a pugilist, but he was a good worker in school. His recreation hours, when all others were at play, were often in school working at a Latin or French translation, and he had to be driven to take outdoor exercise by one of the masters. He was unusually devoted to his mother, and on one occasion when she was ill he was found mounting guard at her bedroom door with a drawn sabre, threatening anyone who dared to enter.

When Keats' grandfather, Jennings, died in 1805, Keats being then about ten years of age, he left a small fortune, part of which was assigned to the Keats children. From this and other sources, including his writings, Keats had enough to live on independently for the brief remainder of his life. Several volumes of poetry were published. He was an ardent and exact student of medicine, though he obtained his degree before he reached the age of 21.

It is said that while sitting dreamily with a friend one day the young poet broke out with the announcement that he had composed a new line,

"A thing of beauty is a constant joy" and added:

"What think you of that?" "It has the true ring, but is wanting in some way," said his friend.

After an instant of silence, Keats cried:

"A thing of beauty is a joy forever."

So the first line of the deathless "Endymion" was born, one of the imperishable lines of English poetry.

One of Sir William Osler's many papers on medical history was that of "John Keats—the Apothecary Poet."[9]

"Beauty is truth, truth beauty, that is all
Ye know on earth, and all ye need to know."

A walking tour, accompanied by over-exertion and bad weather, is supposed to have caused the onset of the poet's tuberculous disease which so quickly proved fatal. He had a tuberculous larynx. He died in Rome in 1831.

It has been said that some men are so gifted that whatever profession they adopt, they will make their mark. Goethe and Albrecht van Haller, for instance, were preeminent in poetry and medical science respectively. Keats might have become eminent in both, and also perhaps in science.

W. Moore Thompson[10] speaks of the great Scandinavian poet, Henrik Ibsen, who, while not exactly a doctor, studied medicine at the University of Christiana and left only a few weeks before receiving his degree.

George Crabbe was a poet of some renown. He seems best known for his scathing denunciation entitled "The Quack," who believed wholly

in the potency of "oxymel of squills." He also wrote "The Parish Doctor."

The recent poet laureate of England, Robert Seymour Bridges, practiced medicine successfully for 25 years, and up to recent years was still active as a pediatrician. Louis H. Roddis[11] says that Bridges was the only physician out of a total sixteen who held the title of Poet Laureate of England, but other sources of information tell us that Robert Southey, who was poet laureate just preceding William Wordsworth and Alfred, Lord Tennyson, was also a physician. Bridges had abundant private means enabling him to follow his avocation of poetry without difficulty. He remained a poet and scholar, and it has been said that few other English poets have been such profound students of the art of versification, or have so admired, studied, experimented and exalted the use of poetry as a medium of expression. In 1920 he was elected to fellowship in the Royal College of Surgeons. Like many poets and physicians, he was an excellent amateur musician.

Of all American medical men who have excelled in literature, Oliver Wendell Holmes stands first and foremost. He is classed among the four chief poets of America, and his wonderful "One Hoss Shay," and the poem whose closing stanza is:

"Build thee more stately mansions, Oh my soul,
As the swift seasons roll;
Leave thy low-vaulted past;
Let each new temple, nobler than the last,
Shut thee from heaven with a dome more vast,
Till thou at length art free,
Leaving thine outgrown shell by life's unresting sea."

is known to all men.

Who of any culture in this broad land does not recognize "The Chambered Nautilus"?

It is true that the poet's special gifts must be at once precise and musical, remarks Henry R. Viets.[12] It can be understood why Dr. Holmes has himself expressed the thought that the poem just mentioned, though he wrote it himself, was his favorite poem. So widespread in the medical profession and the speakers of the English language was Holmes' personality and individuality, that an obscure physician in England once wrote:

"Never have I so known and loved a man whom I have never met."

Dr. Holmes' wit is proverbial. Miller says that he began his general practice in Boston with the motto that the smallest fever would be thankfully received. At Harvard he occupied, as he said, not a chair but a whole settee. He was assigned the last hour of the day for his lecture, for at that time no other member of the faculty could keep the students awake. If it is true that to be liked by people is to like people, one is interested by the fact that Dr. Holmes was interesting because he was universally interested.

On the occasion of the presentation to the College of Physicians of Philadelphia of Oliver Wendell Holmes' portrait, Weir Mitchell, himself an outstanding poet, spoke:

"The poet's rank thy title here completes,
Doctor and poet—so was Goldsmith, Keats;
The voices failing murmur to an end
With 'Welcome, welcome, doctor, poet, friend.'"

Frederick C. Warnshuis[13] has written entertainingly of the activities of Dr. Holmes. As illustrating how a poetic thought can often be forcefully expressed in prose, Dr. Holmes, during one of his lectures on anatomy, pointing at the lower portion of the pelvic bone, said:

"These, gentlemen, are the tuberosities of the ischia, on which man is designed to sit and survey the works of creation."

And on another occasion, on picking up a female pelvis and pointing to the pubic arch, he said:

"Gentlemen, this is the triumphal arch through which every candidate for immortality must pass."

These are poetry in its very essence.

He shed the glow of his art and spirit over his followers and gave to his students some of the most attractive hours of their lives. There is profound philosophy in these two lines:

"When lawyers take what they would give,
And doctors give what they would take."

But he evidently despairs of the attainment of this ideal, for he says:

"But when you see that blessed day,
Then order your ascension robe."

But do not let us forget, while thinking of doctors and poets, that our own W. S. Thayer of Baltimore, was a poet of no mean creations and has often written, though seldom published his verse.

S. Weir Mitchell, one of the most distinguished of American physicians (1830-1914) was also an outstanding poet and writer of fiction. Curiously enough, he published nothing for public consumption until after he was 50 years of age. Someone has said:

"Mitchell's vocation and special bent was neurology, and his avocation and distraction literature."

His father before him was a great physician and a poet.

The famous Henry Havelock Ellis, born in 1859, and a distinguished author of medical literature, has published a book of poems.

One of the best known and best beloved of the latter day physician-poets was, of course, John MacCrae. Born in Canada in 1872, he graduated in science and medicine at the University of Toronto in 1898 and was later appointed to the faculty of medicine at McGill University and Royal Victoria Hospital. He served in France during the World War, rising to the rank of Lieutenant-Colonel, and had just been appointed consulting physician to the British armies in France when he died of pneumonia in 1918. Soon after that, Sir Andrew Macphail selected a number of MacCrae's poems and published them under the title, "In Flanders Fields and Other Poems."

It is, of course, his beautiful and inspiring "In Flanders Fields" which chiefly brings him forward as outstanding in the world of poetry.

He was a brother of Thomas MacCrae, who was associated with the illustrious Sir William Osler and co-author with the latter in his magnificent medical classic, "The Principles and Practice of Medicine," which today undergoes regular revision and new additions.

John MacCrae was also known for his medical authorship, being associated with Professor Adami in the production of the "Text Book of Pathology."

To his own students, MacCrae quoted the legend from a picture, to him "the most suggestive picture in the world":

"What I spent, I had; what I saved, I lost; what I gave, I have."

He stated:

"It will be in your power each day to store up for yourself treasures which will come back to you in the consciousness of duty well done, of kind acts performed, things which being given away freely you yet possess. It has often seemed to me that when the judgment comes those prized faces look up and see the Lord: When saw we Thee an-hungered and fed Thee; or thirsty and gave Thee drink, a stranger and took Thee in, naked and clothed Thee; and *there* meets them that warrant-royal of all charity: 'Inasmuch as ye did it unto one of the least of these, ye have done it unto me.'"

That is poetry!

There will be amongst these awed ones many a practitioner of medicine.

And lastly, the great and beloved George David Stewart, whom Bernard Sachs wrote about as "Man and Poet,"[14] pointing out that it is difficult to decide whether to speak of him as a great surgeon, a most attractive teacher, a man of wonderful executive ability and a great wit, a poet in his own right, a man of deep religious fervor, a great biblical scholar, or as a genial, warm-hearted friend. Here we speak of him as a brilliant versifier and poet. He was a member of the famous Charaka Club, elected in 1921, and on the Board when Charles L. Dana, Arpad Gerster, Walter B. James and Pilcher were regular attendants; when Joseph Collins was likely to startle the meeting with his incisive wit, to be countered either by Dana or Petterson. Stewart's was, indeed, a magnificent personality. The best revelation of his own character is found in his lines, "The Road."

"High road, low road, all roads lead to Rome:
But the luring, laughing, beckoning road
Is the road that leads back home:"

* * * *

"For all Thy ways are heavenly ways and every trail leads home."

But for a few vagrant thoughts I have brought you nothing that is new. I have only gathered, for the delectation of those of you who had never before beheld them, a handful of the bright jewels which must forever adorn the crown of the Art of Medicine. If my efforts have tried your patience, I am sorry. If you have liked them, I am happy. So be it.

May our hearts and minds be imbued with a knowledge and love of art, and bring us to an everlasting reverence and affection for all that is good and true and beautiful.

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THE PATHOLOGY OF HUMAN BRUCELLOSIS*

REPORT OF FOUR CASES WITH ONE AUTOPSY

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We have recently observed at Duke Hospital a case of chronic brucellosis which presented a clinical and histologic picture strikingly similar to that of Hodgkin's disease. Since then we have studied three additional cases of brucellosis, which were diagnosed Hodgkin's disease, and from the lymph nodes obtained by biopsy brucella was cultured in each case. The results of these studies, and a report of an autopsy on one case are included in this paper.

Reviews of the literature of brucellosis have been given by Sprunt and McBryde[1] in 1936, and by Menefee and Poston[2] in 1938. Since Bruce's[3] original description of "Malta fever" in 1887, several descriptions of the histo-pathologic changes in the disease have appeared, but there is no general agreement upon the type of cellular change produced, and no specific picture has been described as characteristic of brucellosis.

CASE REPORT

R. W., a white male textile worker, aged 26 years, was admitted to Duke Hospital on six different occasions, death terminating the last admission. His clinical history is long and only a brief abstract is herewith presented.†

Present Illness.—Eleven months before admission the patient began to have periodic attacks of fever (38 to 40° C.), general malaise, weakness, anorexia, and occasional chilly sensations. There was a diarrhea of 2 to 6 watery stools without blood or mucus and a slight cough, productive of small amounts of purulent sputum without blood. This attack lasted four weeks. Since the onset he has continued to have similar attacks lasting from 1 to 4 weeks, alternating with 1 to 2 weeks of good health.

He has drunk considerable raw milk from a neighbor's cow which is said to have been ill. The nature of the cow's illness was unknown.

Physical examination (first admission)—Temperature 39.8° C.; pulse 110; respiration 20; blood pressure 132/80. A well developed and nourished white male who appeared chronically ill. The positive findings were as follows: generalized lymphadenopathy was present; the nodes were small, discrete and tender. The margins of the tongue were red; the pharynx injected. The spleen was palpable five centimeters below the costal margin, soft and slightly tender. There was tenderness in the right upper quadrant, but the liver edge was not palpable. The physical examination was not otherwise remarkable.

The blood findings were as follows: hemoglobin 13.2 grams, or 85 per cent of 15.5 grams; red blood cells 4,000,000; white blood cells 5,100; differential count: polymorphonuclear leukocytes, 84 per cent; large lymphocytes, 7 per cent; small lymphocytes, 6 per cent; monocytes, 2 per cent; eosinophils, 1 per cent; Wassermann and urine examinations negative.

The blood picture remained the same during the first admission, and repeated search for blood parasites was negative. The Widal was negative; Brucella agglutination was positive in a dilution of 1-640. Repeated agglutinations on subsequent admissions were negative. Phagocytic index for Brucella was negative, as were repeated blood, urine and stool cultures. Skin tests done with anti-brucella goat serum were positive, but there was no endermic reaction with "brucellergin." X-ray studies of the chest and the gallbladder revealed nothing abnormal.

After three days in the hospital the temperature fell to normal and remained so. He improved rapidly and was discharged after 11 days. The clinical impression was pyrexia due either to Hodgkin's disease or brucellosis.

Nine days after discharge he returned with the same complaints and with a fever of 39.7° C. Physical examination was essentially the same as before. Biopsy of a supra-clavicular lymph node was done. After studying this lymph node (*Fig. 1*) one of us reported: "Chronic lymphadentitis with necrotic foci, suggestive of brucellosis, tularemia or tuberculosis." There was nothing to suggest Hodgkin's disease histologically. At the time of the biopsy a part of the node was sent to the biological division for culture. Brucella was grown from the node, and these organisms were agglutinated by known Brucella antiserum. The temperature had fallen to normal by this time, but it was decided to treat the patient with anti-brucella goat serum. He received 60 c. c. during the next 7 days. With the exception of mild but prolonged serum sickness the course was uneventful, and he was discharged after 30 days' hospitalization.

Between the time of this second admission in December, 1936, and the time of his death in February, 1938, he returned to the hospital four times. Each time the story was essentially the same, and the physical findings varied but little. Each time he appeared to have lost ground, and to be in generally poorer condition. His hemoglobin, red count and white cell count, which were essentially normal on the first admission, were lower on each admission. The fever was higher and lasted longer and he developed various abdominal and joint pains.

On the third admission he was started on Brucella vaccine, which failed to help him from either a clinical or immunological standpoint. The only therapeutic

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†This case has been reported from a clinical viewpoint by Menefee and Poston.[2]

agent that appeared to be of benefit was repeated blood transfusion. Following these his temperature usually subsided promptly and he appeared much better.

After he was discharged on his fourth admission, gallbladder cultures taken previously became positive for Brucella organisms. He was called back to the hospital and a cholecystectomy was performed. His postoperative course was uneventful for eight days; he then developed fever which ranged from 39 to 40.6° C., and lasted 13 days. There was no sign of infection around the operative wound. Sulfanilamide therapy was attempted, but his leukocyte count, which by now was ranging around 2,000, fell rapidly to less than 1,000, and sulfanilamide therapy was discontinued.

On the last admission in February he complained of pain in the left side of his chest, generalized pain in the bones and joints, anorexia, and weakness.

Physical examination showed a temperature of 40° C.; pulse, 130; respiratory rate, 28; and blood pressure 80/40. He was obviously critically ill, very emaciated, jaundiced and extremely pale. The cervical and submental nodes were enlarged and tender. There were signs of consolidation of the lungs; the liver and spleen both were palpable.

The blood picture was: hemoglobin, 6.6 grams; red blood cells, 2,120,000; white cells, 2,700; polymorphonuclear leukocytes, 70 per cent; stab forms, 30 per cent. The urine was negative. There was a direct van den Bergh of 12.4 mg. per cent and a nonprotein nitrogen of 84 mg. per cent.

X-ray studies confirmed the clinical impression of bronchopneumonia.

He was given 3 transfusions and the pneumonia appeared to be improving; however, his general condition became progressively worse, and he expired 10 days after the last admission.

AUTOPSY FINDINGS

The body was markedly emaciated; a decubitus was present; the skin was icteric. There was a generalized lymphadenopathy, particularly of the nodes in the retroperitoneal region and of those at the liver hilum. All of the serous cavities contained a yellow fluid. The lungs exhibited many old and fresh fibrous and fibrinous adhesions. The cut surfaces of the lung, as well as those of the liver and spleen, showed multiple, small, well circumscribed, pale, opaque nodules. The heart was dilated, but not hypertrophied. The spleen was greatly enlarged (1,200 grams). The left adrenal was completely destroyed by encroachment of the tremendously enlarged retroperitoneal lymph nodes. The remainder of the organs showed nothing of note. The brain and spinal cord were negative.

The tissues were fixed in Zenker's fluid (Helly modification) and a dilute solution of formaldehyde (U. S. P. 1:10). Sections were stained with hematoxylineosin by the Giemsa method, with Sudan IV for fat, by both the MacCallum and the Brown and Brenn method for bacteria and for hemosiderin.

Microscopic Study.—Sections of all lymph nodes removed (*Figs. 2* and *3*), including axillary, mediastinal, bronchial, retroperitoneal, iliac and femoral showed essentially the same picture. In examination of the slide grossly, definite large areas of necrosis could be seen. Microscopically, these areas were made up of homogeneous eosinophilic material containing very little or none of the original cellular element of the node. Around the edge of the necrotic areas could be found large pale cells with irregular pyknotic nuclei. These cells had the appearance of a remarkable reticulo-endothelial proliferation with considerable fibrous tissue replacement. In some areas very definite giant cells could be made out, which did not have the appearance of Langhan's giant cells, but were more on the order of the foreign body type of cell. There were numerous large cells indistinguishable from the Dorothy Reed type. The capsule of the lymph nodes in several sections, notably in the retroperitoneal group, showed this reticulo-endothelial hyperplasia, but in no instance was this growth noted beyond the capsule proper. Perhaps the most involved of the lymph nodes were those around the hilum of the liver and those along the vertebral column in the region of the left adrenal.

Iron stains of all lymph nodes showed only very minute quantities of iron irregularly distributed.

In the lungs there were two distinct lesions. The greater part of them were peribronchiolar and endobronchiolar. Within the bronchioles could be seen great collections of polymorphonuclear leukocytes and definite inflammation of the bronchiolar epithelium, indicating a bronchiolitis. In the peribronchiolar region were large collections of round cells and polymorphonuclear leukocytes. This inflammatory process did not penetrate to any great distance beyond the bronchioles. Scattered throughout the lung, however, sometimes surrounding the bronchiolar lesion just described, occasionally surrounding a blood vessel, and frequently in the lymphatics, could be seen the same type of reticulo-endothelial proliferation which has already been described in the lymph nodes. This was particularly noticeable in the inter-lobar pleura. On cross section of the lymphatics of this region could be seen actual hyperplasia of the lining membrane of the lymphatics themselves.

Due to the mechanical obstruction caused by the large lymph nodes at the hilum of the liver, great dilatation of the bile canaliculi with tremendous round cell infiltration in all portal areas and considerable fibrosis were found. This could be explained on the basis of obstruction with perhaps a retrograde or ascending infection. In addition to this process there was also a reticulo-endothelial hyperplasia present. This was seen in numerous areas of the liver and corresponded to the nodules seen grossly. These areas showed extensive necrosis, giant cells and Dorothy Reed cells. The liver cells proper showed extensive degeneration and actual necrosis in some areas, with large vacuoles being present. A fat stain disclosed that these vacuoles consisted entirely of fat. A glycogen stain showed almost complete absence of glycogen from the liver.

The glomeruli of the kidneys showed no definite lesions. The tubules were diffusely swollen and cloudy and showed a few casts in their lumina with some degeneration of the nuclei. There was only an occasional area of the reticulo-endothelial proliferation noted in the kidney. The perinephric fat, however, revealed a great many nodules of reticulo-endothelial proliferative tissue.

Culture of the lymph node, liver, spleen and testes were positive for Brucella.

Anatomical Diagnosis.—There is a history of brucellosis (positive cultures) with remission and exacerbations. There is a non-specific lymphadenitis. Chole-

cystectomy has been done. There is brucellosis with multiple small nodular lesions in lungs, liver, bone marrow, spleen and lymph nodes (bronchial, mediastinal, retroperitoneal, mesenteric, axillary and inguinal), hepatomegaly, jaundice (obstructive), splenomegaly with multiple necrosis, cardiac dilatation on the left, without hypertrophy, decubitus, emaciation and dehydration.

DISCUSSION

So great was the interest aroused by this

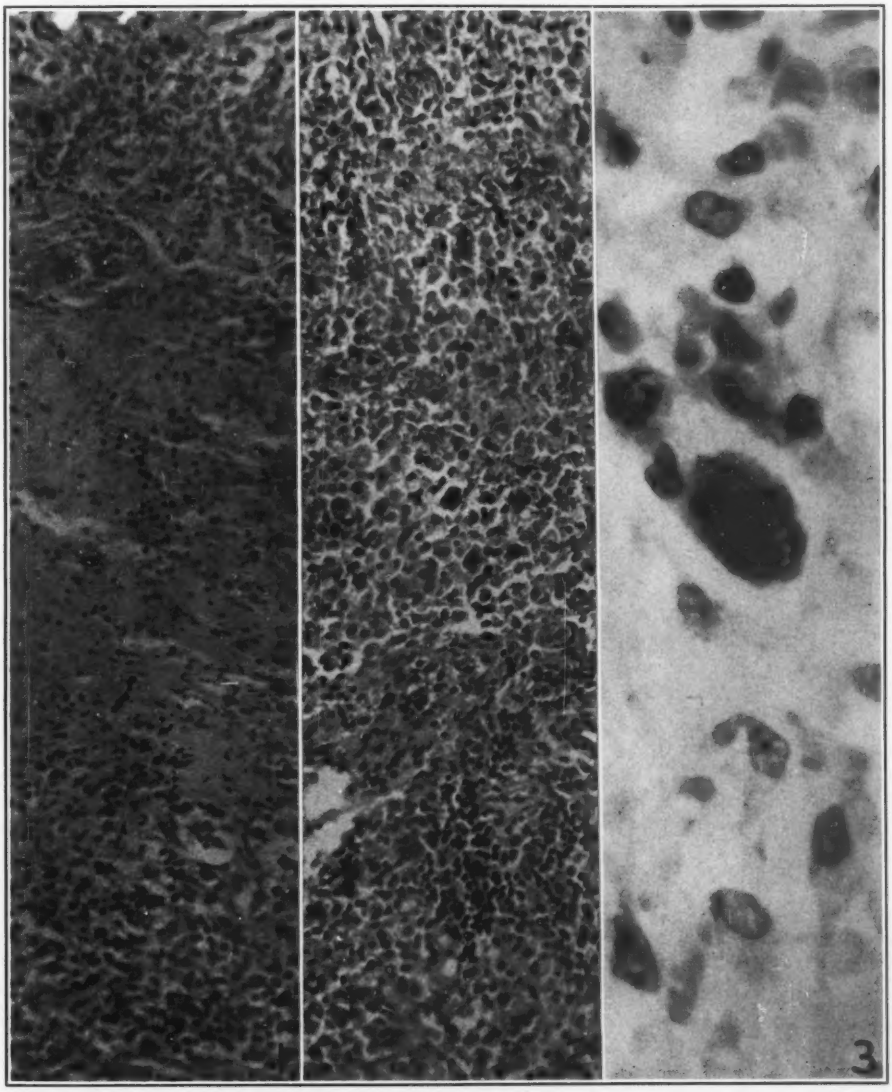

Plate 1

Fig. 1, Case 1.—A section of the lymph node biopsy taken one year before death, showing non-specific necrosis (hematoxylin and eosin x 150).

Fig. 2, Case 1.—A section of a retroperitoneal lymph node removed at autopsy. A large number of eosinophils is present, as well as diffuse fibrosis and many Doro.hy Reed cells (hematoxylin and eosin x 150).

Fig. 3, Case 1.—High power of Fig. 2 (hematoxylin and eosin x 150).

case at our conferences that it was decided to study in more detail previous autopsies of Hodgkin's disease and of brucellosis. This work is at present under way. Several months after this autopsy had been performed, we received lymph nodes from three different patients from Rutherford Hospital in Rutherfordton, North Carolina. Our diagnosis on all three was Hodgkin's disease. Due to the cooperation on the part of the staff of that hospital we were enabled to visit the patients and to make further studies on two of them. The further studies were: (1) biopsy and culturing of the node for Brucella, (2) "brucellergen" skin tests, (3) phagocytic indices, (4) agglutination with blood serum for brucella and tularemia, (5) Wassermann tests. The clinical histories and our findings are given here briefly.

Case 2.—The patient was a 48-year-old cattle dealer who was always in good health until the present illness. Six months before admission he had been struck on the right leg by a side of a freshly killed beef. Within two weeks a chronic ulcer formed at the site. Four months before admission he noticed some enlarged lymph nodes in his right groin which continued to grow larger. Two months before admission he developed a similar group of nodes in his left groin. On admission he complained principally of weakness, loss of weight and appetite. Physical examination showed enlarged inguinal nodes bilaterally, palpable abdominal masses, thought to be retroperitoneal nodes, and enlargement of the liver and spleen.

Biopsy of a node from the right groin was diagnosed by us as Hodgkin's disease. Rebiopsy (*Figs. 4* and *5*) several weeks later of a node from the left groin showed the same microscopic picture. Cultures of the node were positive for Brucella.* (Agglutinations with known antiserum were: suis 1:1280; caprine and bovine 1:640). "Brucellergen" skin test and agglutinations of serum for Brucella and tularemia were negative. The phagocytic index was 2.8. Wassermann and Kahn tests were negative. Biopsy of the lesion on the leg showed the same type of tissue as was observed in the lymph node. Cultures of this were negative except for hemolytic *Staphylococcus aureus.*

Case 3.—This man of 27 gave a two-year history of cervical adenitis on the right. He had drunk much raw milk. He said that four months before the onset of lymph node enlargement he had a painful nodule on the frenulum of his tongue which was diagnosed calculus of Wharton's duct. No calculus was forthcoming and the nodule persisted.

Physical examination was negative except for the enlarged cervical nodes on the right.

Biopsy by us was diagnosed as Hodgkin's disease. Rebiopsy (*Figs. 6* and *7*) and culture a few weeks later was again diagnosed by us as Hodgkin's disease. The culture was positive for Brucella and showed the same agglutination titre as *Case 2.* Agglutination with blood serum for Brucella and tularemia was negative. The Wassermann reaction was negative. The phagocytic index was 2.6.

Case 4.—A 24-year-old mill worker had had good health previous to the present illness. In November, 1937, he noticed the gradual development of enlarged lymph nodes on the right side of his neck. Except for this he had been perfectly well. In December of that year the glands were resected. The biopsy report by us was Hodgkin's disease. He returned to his former position in the mill and enjoyed fairly good health except for occasional slight elevation of temperature. In August, 1938, two more nodes appeared in his neck. He was treated with sulfanilamide for a short time by his local physician with some clinical improvement. Symptoms of vertigo appeared, however, and the administration of the drug was discontinued within a week. In September, he came to Duke Hospital and one of the nodes was biopsied. The pathologic report was again Hodgkin's disease (*Figs. 8* and *9*). Cultures of the node were positive for Brucella. The phagocytic index was negative for Brucella. "Brucellergin" skin test and agglutination with blood serum for Brucella and tularemia were negative. The Wassermann and Kahn reactions were negative.

*Sections from all four cases, when stained for bacteria, showed gram-negative bodies which may or may not be Brucella organisms. This problem is still under investigation.

SUMMARY

In the first of the four cases herein reported, the patient did not have histologic evidence of Hodgkin's disease one year before death, but did have brucellosis. At autopsy he still had brucellosis and lesions indistinguishable from Hodgkin's disease. Of the three remaining cases, the first had a definite injury to the leg with ensuing lymphadenitis, which was diagnosed Hodgkin's disease; the second developed a lesion in the mouth with cervical lymphadenitis following, likewise diagnosed Hodgkin's disease. The third case gave no history of trauma, but had drunk raw milk. From all of these biopsies, Brucella was grown.

It will be noted in these cases that although lymph node cultures were possible for Brucella, the agglutinin titre of the patients' sera was consistently negative for the Brucella organism. At the time that *Case 1* had positive serologic reactions, his lymph node biopsy showed only a non-specific type of lesion. One year later, when his serologic reactions were negative, his lymph nodes showed the picture already described. In *Cases 2, 3* and *4,* the serologic reaction was negative. The low phagocytic indices are also of great interest.

In conclusion, it has been shown that the Brucella organism gives rise to a non-specific lesion as a general rule. The lesions previously described have varied from lesions simulating tuberculosis through non-specific necrosis to endothelial hyperplasia. We have reported four

cases in which the individuals' agglutination titres for Brucella, the "brucellergin" tests and the phagocytic indices all were negative. (*Cases 2* and *3* showed very low phagocytic indices). From lymph nodes of all four of these cases, Brucella organisms were cultured. In these cases the histopathology was identical with that of Hodgkin's disease and can be summed up as

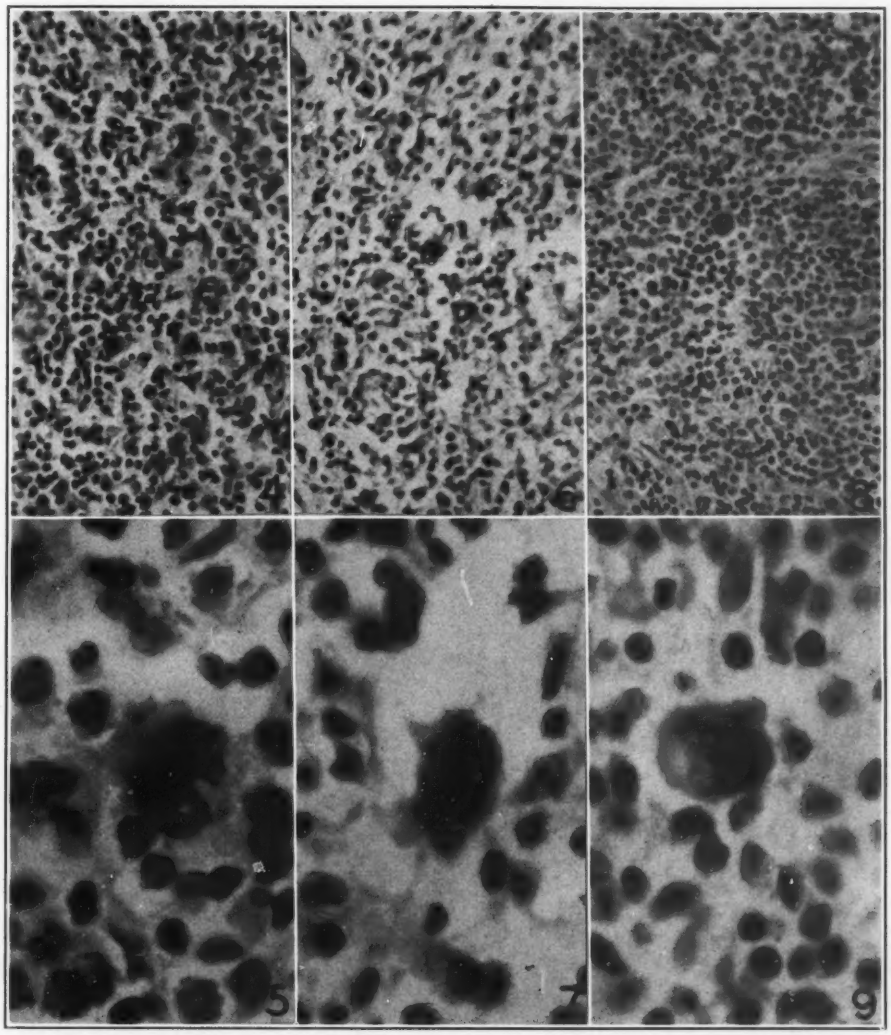

Plate 2

Fig. 4, Case 2.—A section of the lymph node diagnosed Hodgkin's disease, from which Brucella was grown (x 150).

Fig. 5, Case 2.—High power study from Fig. 4 (hematoxylin and eosin x 500).

Fig. 6, Case 3.—Low power field from a biopsy. This was diagnosed Hodgkin's disease. Brucella was grown from this node (x 150).

Fig. 7, Case 3.—Photomicrograph of one of the large cells in Fig. 6 (x 500).

Fig. 8, Case 4.—Section of the lymph node from the cervical region, showing Dorothy Reed cells. Brucella was grown from this node (x 150).

Fig. 9, Case 4.—High power study of Fig. 8 (hematoxylin and eosin x 500).

follows: (1) Complete destruction of the original architecture of the lymph node; (2) pronounced eosinophilia; (3) focal scarring; (4) production of large, pale mononuclear cells; (5) production of giant cells of the Dorothy Reed type. It seems possible that this type of histopathologic reaction may be produced by Brucella infection, and this question is being studied further at present. Attention is drawn to the fact that a simple biopsy of a lymph node is not sufficient to diagnose Hodgkin's disease. Careful cultural studies must be done as well; for, histologically, the lesions produced by the Brucella organism under certain altered immunologic conditions, namely, negative agglutinins, negative "brucellergin" tests, and negative or low phagocytic indices, in the presence of positive lymph node cultures, are indistinguishable from those ascribed to Hodgkin's disease.

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DISCUSSION (*Abstract*)

Dr. Roy R. Kracke, Emory University, Ga.—Since receiving an abstract of this paper some weeks ago I have been impressed with its potential importance, not only with respect to newer knowledge concerning the pathology of brucellosis but with particular reference to the possible etiologic relationship of the Brucella organisms to some types of Hodgkin's disease.

I had the opportunity this morning of examining carefully the lymph nodes from the four cases presented here and also from three additional cases not included in this paper. After a careful study of these sections there can be no doubt that these patients presented the typical and characteristic histologic findings of Hodgkin's disease, and should I encounter these sections in the routine of surgical pathology I should have no hesitation in labeling them as such.

The essayists are to be commended for a justifiable conservatism in the title of their paper, since the implications are more far reaching than merely a discussion of the pathology of brucellosis.

The evidence presented here is definite and clear cut to the extent that Brucella organisms were isolated by acceptable bacteriologic methods from the lymph nodes of four patients who presented the histologic picture of Hodgkin's disease. This within itself is a significant contribution. The next and important question is one of interpretation of these findings and here we tread on dangerous ground because of possible over-enthusiasm.

It seems more than mere chance that these organisms were found in four cases. The criticism may be advanced that the lymphoid system serves as a barrier for various particulate matter, including bacteria, and that such findings are of little significance. It would be of interest to know whether or not other lymphoid diseases would present similar findings.

The cases presented here include those with a clinical diagnosis of brucellosis and also those with a clinical diagnosis of Hodgkin's disease, and from both the organisms were isolated.

In my opinion, Case 1 of the series is of particular importance since the biopsy findings were those of non-specific necrosis with no evidence of Hodgkin's disease and ten months later at autopsy the histologic picture had completely changed to Hodgkin's disease. In both instances Brucella were isolated. In the meantime, however, the immunologic reactions of the patient had changed so that while the lymph nodes showed non-specific necrosis there was a high titre of agglutinins, yet these had disappeared when the Hodgkin's picture developed. I hope that the essayist will comment on this phase in closing.

For many years there have been reported various organisms from the lymph nodes of Hodgkin's disease, in particular that of avian tuberculosis and the diphtheroids described by Bunting and Yates. The passage of time has shown that these organisms are probably not causative in the disease. Only in recent years, however, has the disease been re-studied with better and improved bacteriologic methods, as illustrated in this paper, using special media, and various degrees of oxygen tension. Perhaps the application of these same methods would be advisable in many diseases where search for a bacterial etiologic agent was abandoned many years ago.

Since this work was done at Duke University by collaboration of two excellent and conservative departments, its correctness must be assumed, and in view of this I am of the opinion that this represents one of the most valuable contributions that I have ever heard presented.

Dr. Wiley D. Forbus, Durham, N. C. — The work which Dr. Parsons and Miss Poston describe here appears to me to be especially significant in three respects.

In the first place it opens up a field of study which has until now been virtually closed since Brucella infections in man *as they have been known in the past* have rarely been fatal in spite of prolonged course and incapacitating effect.

In the second place, the work focuses attention upon a pathologic principle of the greatest importance in the investigation of disease through the medium of pathologic anatomy. The principle to which I refer may be stated as follows: *Basic morphological reactions of tissues are subject to variations and modifications dependent upon factors both incident to and independent of specific injury.* A few comments upon this principle are appropriate. The human body is capable of reacting to injurious agents in a very limited number of ways. Its mechanisms of protection are restricted in number and in principle of operation. In contrast to this limitation the number and variety of agents which may produce injury are virtually beyond count. It would appear, therefore, that any cell or any individual that would survive must master its environment by simple modification or variation of its basic response mechanisms. That the body does this is well known to us all. A gross example of such variation in basic response is to be found occasionally in that remarkable substitution of a lymphoid

cellular exudation in the lung for the usual polymorphonuclear leukocytic response when the lung in a lymphoid leukemic individual suffers an infection by one of the pyogenic organisms. In brucellosis and Hodgkin's disease we may have another and perhaps more subtle illustration of the above stated principle. It is not at all impossible that brucellosis and Hodgkin's disease, as we have known these little understood diseases in the past, represent merely different phases or variants of the basic reaction of the tissues to one and the same injuring agent. The basic mechanism of protection, the inflammatory reaction, does not change in either of the examples here mentioned but it is modified. Whether such modifications as these be active or passive, favorable or unfavorable or whether they be related specifically to the reacting tissue or to the injuring agent seems to me of the greatest importance if we would understand the very nature of disease. Furthermore, diligent study of the principles here stated is not only our responsibility but it offers perhaps our best chance for immediate rewards from investigations based upon the technic of pathologic anatomy.

The third respect in which the work just reported impresses me as significant is directly related to the second. Dr. Parsons has emphasized the extraordinary similarity between the reactions of human tissues to Brucella and the reactions of the tissues to that agent, whatever it may be, which is responsible for Hodgkin's disease. This similarity (if not actual identity) I can confirm from my own studies of the materials upon which this report is based and which include not only those cases of brucellosis which are described but all the cases of Hodgkin's disease which have been studied in our laboratories. Since this discussion must be limited, it is necessary for me to summarize as cryptically as possible the thoughts that this similarity has provoked in my own mind.

(1) Human brucellosis, like the spontaneous and experimental disease in the lower animals, has as its basis a pathologic process which is susceptible of extraordinary variations. The lesions corresponding to these variations, although produced by the same agent, are probably determined by the specific state of reactivity of the tissues.

(2) Because of the wide variation in tissue reactivity Brucella produces a disease in man which may be indistinguishable both clinically and anatomically from certain fungus infections, tuberculosis, and Hodgkin's disease. Now that this similarity is recognized, our diagnostic methods must be utilized *in full* if our differentiation of these diseases is to be reliable.

(3) Since our methods for the cultivation of fungi, for the detection of the tubercle bacillus and the cultivation of Brucella are critical and reliable it can be definitely stated that brucellosis is etiologically a different disease from that produced by either the fungi or the tubercle bacillus in spite of their anatomical similarity. Since, however, we know nothing of the causative agent of Hodgkin's disease, the striking similarity (if not actual identity) of the tissue reactions in brucellosis and Hodgkin's disease not only invites but demands a critical consideration of the possibility that these diseases are etiologically as well as anatomically identical. The work now in progress in our laboratories and which we hope will be taken up by others is designed to test rigorously this possibility. The importance of diligent pursuit of the problem is obvious.

Dr. J. R. Schenken, New Orleans, La.—I wish to ask for the results of the animal pathogenicity tests of the strains of the organisms isolated and their antigenic powers. Was a Gordon test performed with the tissues removed and if so, what were the results?

Dr. Parsons (closing).—Dr. Kracke asks what work is being done from a therapeutic standpoint?

Because of the consistently negative Brucella agglutinations we are attempting to develop positive agglutinins in the blood serum by the administration of immune serum. Our hypothesis is that this Hodgkin's-like lesion may occur in patients suffering from chronic brucellosis when they are in an anergic state. It is possible that the lymph node picture might change if the patients could build up a positive agglutinin titre.

All of the patients so far examined have had pruritis to a mild extent.

The work on animal passage is under way. No results are as yet available.

The Brucella organisms were cultured from chopped lymph nodes. The culture media were beef infusion blood agar adjusted to pH 7.4 and liver infusion agar adjusted to pH 6.8. The cultures were made aerobically and under 10 per cent carbon dioxide tension.

We have made bacterial stains of all of the sections and in all have found small gram negative bodies which may or may not be the Brucella organism. Since, however, Brucella is not a contaminant, we have assumed that the organism is present in the tissue.

The Gordon test has not been applied to any of these cases.

USE OF STAINLESS STEEL RODS TO CANALIZE FLEXOR TENDON SHEATHS*

By H. vH. THATCHER, M.D.
Portland, Oregon

The hand which has weathered a storm of severe infection or trauma taxes the ingenuity of the surgeon. The anatomy of the flexor tendons is such that they do not react kindly to insult. They are confined closely in sheaths, where infection causes swelling with resulting ischemia of the tendons. This is particularly true in the fingers and under the transverse carpal ligament. The end result of infection here is the substitution of cicatricial tissue for serous membrane with a loss of gliding surface. As a result of cicatricial invasion, the tendons become brittle, and, with their sheaths, contract and become adherent to adjacent structures.

*Read in Section on Railway Surgery, Southern Medical Association, Thirty-Second Annual Meeting, Oklahoma City, Oklahoma, November 15-18, 1938.

Tendons glide in tunnels just large enough to accommodate them. If sutures are placed in a flexor tendon in a finger, adhesions between the tendon and adjacent tissue will result. For this reason, function is notoriously impaired after suture of flexor tendons in fingers. In like manner, any break in the continuity of a flexor tendon sheath will result in adhesions, thus impairing the ultimate function of the tendon. Trauma, infection, or even surgery, are followed by swelling of the flexor tendons with subsequent loss of motion. For this reason, before reconstructive tendon surgery is attempted, the tendon sheath should be rested and an effort made to restore its gliding surface. Certain foreign materials inserted into tendon sheaths for a period of time will allow the damaged gliding surfaces to reestablish their continuity.

Mayer and Ransohoff have introduced circular celloidin rods into flexor tendon spaces for this purpose. These, however, are not easily available, due to the length of time required and difficulty encountered in their preparation.

Because of their availability, we employed glass stirring rods, seven thirty-seconds of an inch in diameter, cut to suitable lengths, and their sharp ends rounded in a gas flame. These were bent to conform with slight flexion of the finger and were inserted into the flexor tendon tunnels. They caused no foreign body reaction in fingers. Use of glass in fingers obviously carries the possibility of breakage and, while we avoided this hazard, the fear of such an accident was always present.

A stainless steel rod would not break and might be a satisfactory substitute, providing it would cause no reaction. One was tried and proved satisfactory, with no foreign body reaction. Since then we have used them exclusively.

Stainless steel rods are advantageous because they are readily available, are rigid, and will splint the finger, giving it a chance to rest. They do not corrode and leave physiologically smooth surfaces through which a transplanted tendon will glide. These rods may be obtained from a metal shop and should be stainless steel throughout. None of the rods used has shown the slightest pitting or discoloration when removed. The diameter of the rod should conform to the diameter of the tendon sheath in which it is to be placed and should be larger than the tendon to be transplanted. Ordinarily, this diameter is between five thirty-seconds and seven thirty-seconds of an inch. The rod is cut to the desired length, bent slightly to conform to the curve of the flexor tunnel, and polished on a buffing

Fig. 1

Photograph of a stainless steel rod. Note slight curve of the oval-shaped rod, causing it to conform more readily with the flexor tendon space in the finger. Grooves are filed near the rod ends to facilitate the tying of silk.

Fig. 2

Drawing of proper sites for skin incisions in the hand and fingers.

wheel. We prefer filing the rod oval-shaped so that it conforms to the natural shape of the tendon. A groove is filed near each end of the rod so that tendon stumps in the palm may be tied into one of them. The stumps thus are easily found at the second operation (*Fig. 1*).

Reconstructive surgery on the flexor tendons should be considered a major surgical procedure and preoperative care is important. Careful preparation of the hand and forearm is necessary if infection is to be avoided. For this reason, the patient should enter the hospital at least twenty-four hours before the operation. The hand and forearm are shaved and scrubbed with soap and water and the nails carefully cleaned. An alcohol dressing then is applied up to the elbow. The following day the dressing is repeated.

In the surgery, the hand and arm are elevated and an Esmarch bandage wrapped tightly over the preliminary dressing from the fingers to the elbow to remove all possible blood. It is important that complete ischemia of the hand be obtained because sensory nerves then may be isolated and sutures applied with much greater precision. Trauma from sponging is, of course, avoided.

With the hand still elevated, a blood pressure cuff is applied just above the elbow and inflated to a pressure of 300 mm. of mercury and used as a tourniquet. Clamps are then applied to the tubing to prevent leakage. After the blood pressure cuff has been inflated the Esmarch bandage and the preliminary dressings are removed. The operative field is painted with full strength tincture of iodine. If any leakage occurs, the cuff should be deflated, the arm elevated for a few minutes and the pressure reapplied. This tourniquet can be applied safely for an hour.

Location of an incision in the fingers and hand is very important. An incision should be made transversely in the normal crease at the distal phalangeal joint end and the insertion of the profundus tendon located and severed about one-fourth inch from its insertion. A short longitudinal incision is made on each side of the middle phalangeal joint, midway between dorsal and volar surfaces. Through these incisions the insertion of the sublimis tendon may be severed. A skin incision is now made transversely in a palmar crease about one inch proximal to the base of the disabled finger (*Fig. 2*). The sublimis and profundus tendons of the fingers involved are located, braided silk tied about both and the tendons severed distal to the tie. The tendons of the fingers are now removed with long curved scissors or, better still, a Bunnell tendon stripper. In case of dense adhesions between tendon and flexor tunnel, it may be necessary to extend the lateral longitudinal incisions

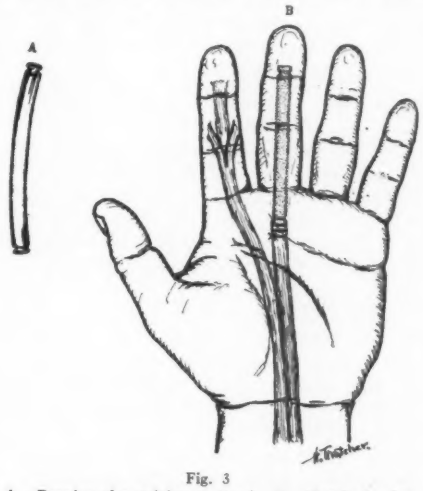

Fig. 3
A. Drawing of a stainless steel rod. B. Sketch showing relation of sublimis and profundus tendons in the index finger. Stainless steel rod is shown in the flexor tendon space of the middle finger, tied to the tendon stumps in the palm.

Fig. 4
Photograph showing wire mesh constructed to avoid touching the fingers. Note that this protective device may be covered with bandage.

to facilitate removal of the tendons. A stainless steel rod, previously prepared, is now introduced into the flexor sheath of the finger through the distal incision. The silk, tied about the severed end of the tendons in the palm, is knotted securely to the groove in the rod. All wounds are closed with silk sutures and no dressing applied (*Fig. 3*).

. Our method of treating such a wound is to apply a cast from the upper forearm to the wrist and then to shield the fingers with wire mesh. This mesh is so arranged that it does not touch the fingers nor the hand (*Fig. 4*). It may be adjusted so that the wound may be inspected at will (*Fig. 5*). This method eliminates the older practice of removing blood-hardened dressings every few days in order to view the wound. Traumatization of wounds in this manner causes pain and may lead to infection. Blood and serum seepage is allowed to escape and dry. This is the natural method of wound healing and is good insurance against subsequent infection. Aside from inspection and the removal of skin sutures nothing more is done for three weeks. Experience has shown this to be ample time for recanalizing the flexor tendon tunnel (*Figs. 6* and *7*). At the end of this time the patient is readmitted to the hospital and the dressing removed, the forearm reshaved, and, with the hand, covered with alcohol dressings. The hand, however, is not scrubbed as before. It is well to prepare one foot and a leg for possible use of an extensor tendon of a toe for a transplant.

The palmaris longus tendon is the most satisfactory for a transplant, but in a few instances it is congenitally absent. A tendon for transplant must be strong enough for the purpose and smaller in circumference than the newly formed tunnel in which it is to be inserted. The tendon of the palmaris longus muscle may be easily located in the middle of the wrist crease where it inserts into the palmer fascia. A transverse incision one-half inch long is adequate for its exposure. The tendon is grasped firmly with a hemostat and severed distal to the forceps, then a firm pull on the proximal portion of the tendon will easily outline its course in the forearm. A short transverse incision in the forearm at the junction of the tendon and muscle is made and the tendon severed. With a strong tug on the forceps the palmaris tendon will be delivered from the distal wound. It should be placed in

Fig. 5
Illustration of wire mesh opened for the inspection of hand and fingers.

Fig. 6
Roentgenogram of anterior posterior view of a hand with rod in position.

normal saline to avoid drying. Usually the palmaris tendon exceeds five inches in length and is more than adequate for any one finger. The loss of this tendon causes no disability in the normal function of the hand. When removing the palmaris longus tendon by this method it is usually divested of its paratenon covering.

Much has been written about conserving the paratenon fat covering of a tendon used as a transplant. Experience has shown that this covering is unnecessary when replacing a tendon in a finger the sheath of which has been recanalized by means of a stainless steel rod.

The incisions made for the rod insertion are reopened and the end of the steel rod is exposed through the distal wound, along with the distal tag of the profundus tendon. Better exposure may be obtained by making two lateral incisions distal from the ends of the transverse one (*Fig. 8*). These incisions will not injure a newly formed flexor tunnel. The palmaris tendon previously removed for transplantation is now sutured to the distal tab of the profundus tendon. This is done in the following manner: At its smaller or inserting end a number two braided silk suture is woven into it for a distance of one-half inch, by means of two straight cambric needles with calyx eyes. The silk suture

Fig. 7
Lateral view of the same hand.

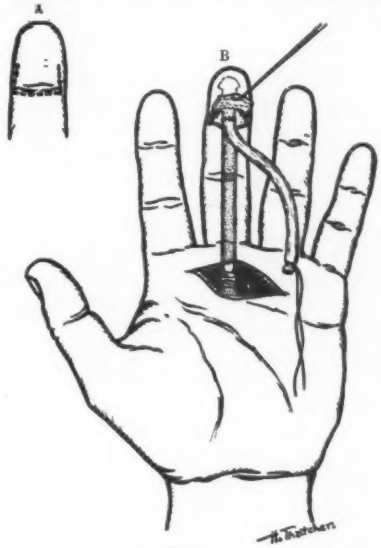

Fig. 8
A. Inset: Showing lateral incisions distal from the ends of the transverse incision to facilitate better exposure. B. Tendon transplant sutured to remaining tab of profundus tendon, with rod in place and palmar incision opened.

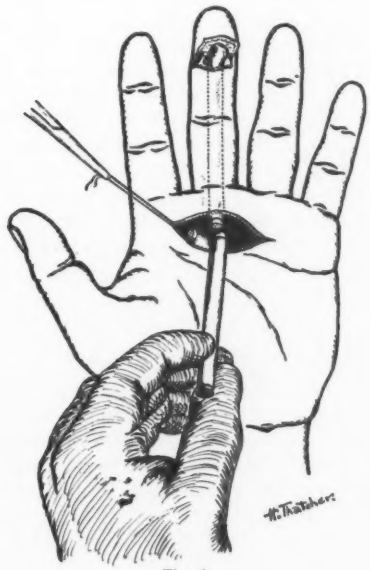

Fig. 9
Rod withdrawal of the tendon transplant through palmar wound, preparatory to final suturing of the palmar flexor tendons.

is pulled taut to remove all slack from the tendon. The straight needles are removed and replaced with small curved needles. Both ends of the silk are sutured from side to side through the profundus tendon tab, drawn tight and tied in a square knot.

The proximal incision which has been reopened exposes the proximal end of the steel rod. By means of the silk tied to the rod groove, the flexor tendons in the palm are identified and pulled into the wound.

Before removing the rod, a suture is passed through the free end of the tendon transplant and tied around the groove in the distal end of the rod. As the rod is withdrawn through the palmer wound the new tendon is pulled through its tunnel and into the palmer wound, where it is sutured to the proximal stump of the flexor tendons (*Fig. 9*).

The question of correct tension at this point is important. Upon the proper length of the transplant depends the proper tension and upon the proper tension depends the ultimate function of that finger. Proper tension is indicated when tying of the final suture produces very slight flexion of the finger.

The skin wounds are closed with silk and the hand again encased in wire mesh without dressings. Considerable passive motion and slight active motion are started on the second day following the operation. Active motion is increased daily so that at the end of three weeks considerable active motion has been achieved. Complete tendon healing requires about six weeks.

Postoperative swelling may occur, but it is never sufficient to prevent active motion, because a tendon transplant, smaller than its reformed tunnel, has been used. Undoubtedly, adhesions will form to nourish the ischemic tendon transplant, but they will be long enough to allow the gliding movement necessary for function if early activity is carried out. No foreign body reaction has been seen following the use of a stainless steel rod, and no infection has followed.

The functional results through the use of rods have been excellent. The transplanted tendons stand normal tension and the results have been better than those obtained from any other method.

SUMMARY

(1) The use of stainless steel for reconstruction of tendon sheaths has been outlined.

(2) This material causes neither infection nor foreign body reaction.

(3) Its use produces a practical tendon sheath which is a good substitute for the normal gliding cells.

(4) This method has produced functioning fingers.

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DISCUSSION (*Abstract*)

Dr. Paul D. Abramson, Shreveport, La.—Dr. Thatcher is indeed to be congratulated upon the ingenuity of this method of attempting to solve the difficult problem of tendon replacement. It is generally recognized that, at best, methods for restoring function to fingers whose tendons are attached to the surrounding structures, and this applies particularly to flexor tendons, are unsatisfactory; so much so, that prevention of extensive tendon scarring and fixation is much better than any attempted repair of these defects. This means the use of especial care in the treatment of all tendon injuries, not only in assuring the prompt repair of severed tendons, but the exertion of every effort to prevent a tenosynovitis. In case of an infection of the hand, it is necessary to establish early adequate drainage, with properly placed incisions, and, most important of all, when the tendon sheaths are involved, the institution of passive and active motions should not be delayed too long, thus minimizing as far as possible, the disability resulting from necessary cicatrix formation. It has been our custom in cases of tenosynovitis, to institute cautious, passive motion as soon as acute inflammatory symptoms have subsided, but before all infection has cleared up. This, I say, is done cautiously, and the effect upon the inflammatory process is closely watched, and the rapidity with which physiotherapy is used depends upon this local reaction.

We have had no personal experience with the use of tubular steel to canalize tendon sheaths, but our experience with other methods of tendon repair has convinced us of the great difficulties which confront one in attempting to rehabilitate certain cases in which the tendons are badly adherent to the surrounding structures. There are several facts which should be borne in mind, and which apply to any form of restorative tendon surgery. Dr. Thatcher has pointed out the necessity of careful asepsis, minimal trauma, and early utilization of physiotherapy. One should remember, moreover, that, before any attempt is made to restore tendon function surgically, the atrophic, overlying skin should be replaced with more viable skin by means of grafting; the essential nerve supply of the involved tendons should be unimpaired, and, most important, the joints upon which the tendon acts should be satisfactorily mobilized before any actual tendon surgery is undertaken.

ANALGESIA IN LABOR*

MODIFIED GWATHMEY METHOD

By C. O. McCormick, M.D.†
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Prior to the announcement of *Dämmerschlaff* by Gauss at the very recent time of three decades ago, analgesia in labor was practically unknown. Within the brief interim many methods of obstetrical relief have been developed and approved, some of which have been perfected to the degree that today it is only slightly important which method one might choose to use in a given case. The important fact is, that although the ideal method has not yet been attained, we finally do have obstetrical analgesia.

The two eminent manifestations of this achievement are the prevailing tranquility in modern labor chambers, and the increased willingness of womenfolk to undergo childbearing.

Analgesia has become such an integral phase of modern conduct of labor that not only does the present day expectant mother anticipate it as a customary service, but the well qualified obstetrical attendant finds himself familiar with one or more methods, and diligently applies one or the other rather routinely. Likewise, the staff of every modern hospital obstetrical department adopts some form of relief which it employs as a more or less regular procedure. The prerequisite of the method used is satisfactory analgesia without injurious or deleterious effects upon either the mother or the infant.

It is the pleasant privilege of the essayist upon this occasion to describe by word and film the form of relief developed in major part and used quite routinely in the Obstetrical Department of the Indiana University School of Medicine. The method referred to is a grossly modified Gwathmey technic.

The pioneer method of Gwathmey, ordinarily spoken of as "rectal ether," holds a commendable popularity, based upon the following fundamental advantages:

(1) Ease and simplicity of administration.

(2) High degree of efficiency.

(3) Inexpensiveness.

(4) Extreme safety for both mother and infant.

(5) Equal adaptability to home and hospital use.

(6) Unique freedom from contraindications.

Herewith are a few comments upon each of these advantages:

(1) *Ease of Administration.*—No complicated or expensive apparatus is required. If need be, the equipment used in giving an ordinary enema will suffice.

The individual administering the rectal ether need not be especially skilled. At the University Clinic fully 95 per cent of the instillations are performed by a student nurse. The question is sometimes raised as to whether it is safe for rectal ether to be given by one not particularly expert. In answer, it is to be borne in mind that the amount of ether used (two and one-half ounces) is insufficient for anesthesia effect, producing instead only analgesia, even though the patient weighs as little as one hundred pounds. The effect is not so profound as to entail danger of the jaw dropping, or the tongue being swallowed. Indeed, the responsibility or risk is no greater than when one orders a nurse to give ¼ or ½ grain of morphine hypodermically.

(2) *Efficiency.*—Davis,[1] in his original report covering fifteen hundred cases (twelve hundred indoor and three hundred outdoor) at the New York Lying-in Hospital, reported a satisfactory analgesia in 85 per cent of the cases. A subsequent report[2] from the same institution, covering many thousands of cases, emphasized an equal efficiency. By improved medication and certain modifications of technic, this efficiency rate has been raised at the Clinic to fully 95 per cent.

(3) *Inexpensiveness.*—The total cost of drugs and the ether solution ingredients varies from a few cents in usual cases to less than a dollar in protracted cases.

(4) *Safety.*—This can be stated adequately by referring to the series of twenty thousand hospital and home cases reported by Gwathmey[3] in which no maternal or infant loss was attributable to the use of rectal ether analgesia. This favorable finding has been substantiated by another series in excess of seventy-five hundred cases conducted at the Indiana University Clinic. Also, a careful survey at the Clinic has failed to show an associated temperature morbidity.

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*Read in Section on Obstetrics, Southern Medical Association, Thirty-Second Annual Meeting, Oklahoma City, Oklahoma, November 15-18, 1938.

†Clinical Professor of Obstetrics, Indiana University School of Medicine.

No infant or maternal loss attributable to the employment of rectal ether analgesia has ever come to the author's attention.

(5) *Adaptability to Both Home and Hospital Use.*—No method of analgesia can be acclaimed as popular unless it applies readily first to that larger group of laboring women, those who still are confined in the home, in America constituting fully 65 per cent of all births.

Rectal ether analgesia can be administered wherever an enema can be given, in a hovel if necessary. A recent graduate administered it successfully to a woman laboring in a box car.

(6) *Freedom from Contraindications.*—There are no contraindications to rectal ether analgesia other than those that contraindicate a soapsuds enema. It is to be added that ordinary hemorrhoids, rectal fistulae and fissures do not afford exclusion. Davis[4] found no contraindication in more than 12,000 cases.

In the Clinic, rectal ether analgesia is used with impunity among nephritic, cardiac and pulmonary cases, whether the affection be acute or chronic. Likewise it is used with equal freedom in diabetic and toxemic cases.

MODIFIED GWATHMEY TECHNIC

The modifications of the Gwathmey technic developed in the Obstetrical Department of Indiana University are as follows:

(1) *The substitution of pentobarbital sodium by oral administration for the magnesium sulphate administered intramuscularly.*—An intramuscular injection is primarily a surgical procedure, and is of sufficient moment to hinder the method's use not only in the home, but in hospital practice as well. The practical value of the purported synergistic action of magnesium sulphate and morphine is more than replaced by the increased amnesia and hypnosis afforded by pentobarbital sodium. In this instance the drug is found to be superior to sodium iso-amylethyl barbiturate. It incurs but one-third the amount of associated delirium, requires half the dosage, and lends a prompter effect and a less protracted hypnosis.

(2) *The substitution of the degree of the patient's suffering for the degree of cervical dilatation as a criterion for the time of administration of the sedatives and the ether instillations.*—This modification spares the patient the contaminating risk from a series of vaginal or rectal examinations. In general practice this risk becomes quite real in that as a rule the vaginal type, not infrequently of questionable technic, is employed.

Further, in addition to sparing the patient the annoyance of the examinations, there is considerable economy on gloves. Then, too, by using the patient's discomfort as a guide, she is extended more satisfactory analgesia. Analgesia refers primarily to the relief of pain and not to cervical dilatation. Many elderly primiparae (in these days their number is on the increase) experience several hours of uncomfortable labor before the cervix attains two fingers dilatation, while on the other hand many multiparae have two fingers dilatation before labor begins.

(3) *A third major modification has been the perfection of a pressure instillation instead of the gravity or funnel method.*—The gravity or funnel method has two or three distinct disadvantages. The first of these is the time element. During the required three to eight to ten to twelve minutes for instillation, the expulsive pains may greatly interfere with the patient's ability to retain the mixture. Also, an assistant is usually employed to an advantage; sometimes of necessity. Not infrequently undesirable mussiness occurs.

The pressure instillation is accomplished by a special apparatus[5] (*Figs. 1* and *2*).

The advantages in employing this pressure apparatus are distinct, and are as follows:

(1) The actual instillation is performed within fifteen seconds, readily within any pain interval.

(2) The instillation is performed without an assistant.

(3) The instillation is higher, and the mixture is better and more comfortably retained.

(4) There is little or no mussiness.

In home practice a fair substitute for the instillation apparatus is a four-ounce "asepto" bulb syringe with a 22 Fr. soft rubber catheter attached, or, better still, a four-ounce hard-tipped "davol" rectal syringe and catheter.

(4) *The substitution of a 5 to 10 per cent sodium bicarbonate enema for the soapsuds enema at the beginning of labor.*—The soapsuds enema by virtue of its strong irritating effect upon the rectal mucosa is materially responsible for the occasional rectal irritation following the use of rectal ether. A proctoscopic examination after a soapsuds enema reveals an effect quite akin to acute proctitis. The irritating effect of

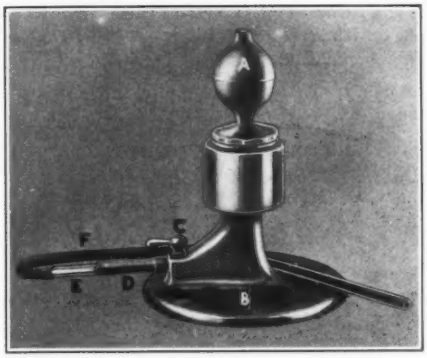

Fig. 1

Instrument Assembled

(A) DeVilbiss bulb.
(B) Metal plate bearing instructions.
(C) Stopcock.
(D) Three-eighths inch red rubber connecting tubing.
(F) Three-inch by three-eighths-inch glass connecting tip.
(F) Twenty-two Fr. red rubber catheter.

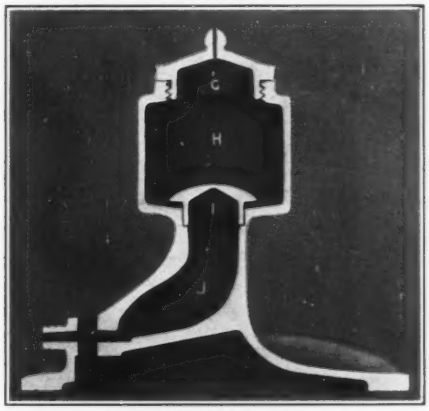

Fig. 2

Instrument in Cross Section

(G) One and three-fourths-inch screw-cap.
(H) Five-ounce receptable for the four-ounce ether-oil mixture.
(I) Fixed stratifying device to limit mixing of the two solutions in "H" and "J."
(J) One-ounce receptable for the preliminary ounce of olive or mineral oil.

soapsuds is best demonstrated by dropping a small drop into one's eye.

The soda enema is conveniently prepared by adding a large heaping tablespoonful of sodium bicarbonate to a quart of tepid water. Not only is the enema efficacious and comfortably active, but its employment in conjunction with rectal ether perceptibly minimizes post-delivery rectal irritation.

(5) *The omission of the follow-up ounce of oil.*—Experience has demonstrated no necessity for the additional ounce of oil.[6] By reducing the gross mixture from six to five ounces, retention is facilitated.

(6) *Omission of the warming of the ether-oil mixture.*—The ether is sufficiently rapidly absorbed from a mixture at room temperature. Besides, warming incurs a loss of ether by evaporation.

(7) *Dispensing with darkening and quieting the labor room.*—At the Clinic labors are conducted in a normal, free, easy atmosphere. Shades are not drawn, patients' ears are not plugged, ordinary conversation is not hushed, and doors are not closed.

It is not an infrequent occurrence to have three or four analgesized laboring patients in neighboring beds, none being aware that the others are in labor.

(8) *The omission of quinine.*—This is an important departure from the original technic. By carrying the cases into active labor under pentobarbital sodium, quinine is omitted without disadvantage. By omitting the quinine not only is the dissolving agent, alcohol, omitted, but the risk of the occasional quinine reaction[7] is eliminated, as is, also, the purported risk of a possible deafening effect upon the infant.[8] However, the real advantage of its omission comes through greatly simplifying the making of the ether-oil mixture. The process resolves itself simply into adding one and one-half ounces of mineral or olive oil to two and one-half ounces of ether. This simplification greatly assists the general practitioner in doing home deliveries.

(9) *The addition of two drachms of paraldehyde to the ether-oil mixture.*—Paraldehye, although a strong hypnotic, is one of the safest. As much as two ounces has been given (by mistake) with no untoward result except prolonged sleep.[9] At the Clinic a routine amount of two drachms is employed. Paraldehyde is a very helpful adjuvant in that it greatly deepens the amnesia and smooths the analgesia. It is particularly applicable during the second stage.

CLINICAL OBSERVATIONS

In addition to the method's advantages, listed and discussed above, prolonged clinical experience registers the following observations:

(1) The medication may be started early in the first stage. Except when morphine or its derivatives are used, the analgesia may be ad-

ministered throughout labor without regard to the cervical dilatation or station of the presenting part.

(2) The patient's cooperative powers are usually well maintained throughout labor.

(3) In addition to a satisfactory analgesia there is a very desirable degree of amnesia, the patient usually having only a vague recollection of the labor.

("All I can remember is someone's telling me to bear down. The rest is a blank;" "I think it was wonderful;" "I know I must have suffered, but I don't remember what went on;" and "I knew nothing at all about anything" are typical quotations taken from our analgesia charts.)

(4) Labor is rarely prolonged. Not infrequently the second stage is shortened. So often is this true that closer observation of the progress during this period is well advised.

(5) The patient as a rule is well oriented, and although she may roll to the edge of the bed, it is only in extreme instances that she threatens to fall out. However, for this reason a nurse or dependable assistant should be with the patient throughout the period of analgesia. (This applies to all forms of analgesia.) The nurse's vigilance may be lightened by the use of adjustable elevated bed-sides. Undue restlessness is only occasionally seen, and restraint is never necessary.

(6) The number of stillbirths is not increased.

(7) Although a large per cent of infants are born apneic to a variable degree, resuscitation is rarely necessary. At the most a few gentle mouth-to-mouth inflations usually suffice. Vigorous resuscitation is usually indicated because of conditions other than those of narcosis. (Morphine and derivatives are purposely avoided within four hours of the anticipated time of delivery, and in all cases of prematurity.)

(8) Although meconium-stained amniotic fluid appears in an increased percentage of cases, its significance is slight in that it is rarely associated with change in fetal heart action.

(9) The postpartum action of the uterus is good.

(10) Forceps deliveries, if anything, are decreased, and lacerations are no more frequent.

(11) Postpartum hypnosis rarely lasts longer than two or three hours, and the patient awakens in a refreshed state.

(12) Normal appetite is restored within a few hours, and lactation is not delayed.

(13) The method is particularly applicable to prolonged labor cases, especially those of primigravidae.

(14) Failure of the method is due in practically every instance to faulty technic (see "Important Points in Technic" under "Outline Procedure.")

(15) Inhalation ether or gas dovetails well during the perineal stage or period of instrumentation, and only about 50 per cent or less of the usual amount of either anesthetic is required. Owing to the narrow margin of safety, chloroform, if administered at all, should be used with extreme caution.

(16) Rectal ether (usually formula I) augmented by 3 or 4½ grains of oral pentobarbital sodium, administered forty-five minutes to an hour prior to operation, affords an excellent basal anesthetic for cesarean or any laparotomy whether the primary anesthetic be general or local.

The advantages offered are:

(1) The patient is asleep upon going to surgery.

(2) The amount of the primary anesthetic is minimized 50 per cent.

(3) Bronchial irritation and postoperative nausea following inhalation anesthetics are proportionately diminished.

OUTLINE OF ENTIRE PROCEDURE

Herewith is presented in outline the analgesia procedure usually pursued in the Obstetrical Department at Indiana University School of Medicine, depicting the various modifications of the original Gwathmey method developed in that Department:

(1) A cleansing 5 to 10 per cent soda enema (one large heaping tablespoonful of sodium bicarbonate in one quart of tepid water) is given at the beginning of labor, preferably not less than one hour before rectal ether instillation.

(2) Early in labor the patient is addressed as follows:

"Mrs. 'Blank,' we are desirous of making your labor as painless as possible and are prepared to do so without danger to you or your baby. Our success in relieving

you will depend somewhat upon cooperation. Therefore, when your pains become uncomfortable let the nurse know and she will give you two, or perhaps three, capsules (pentobarbital sodium, each grain 1½) to relieve you.

"When your pains again become uncomfortable notify her as before and she will give you another capsule or two (pentobarbital sodium) or maybe a hypodermic (morphine sulphate grains 1/6 or 1/4).

"Later, when this medicine begins to lose its effect, let her know and she will inject a solution into your rectum (ether-oil or ether-paraldehyde-oil)."

(Morphine or a derivative is not administered within four hours of the anticipated time of delivery. Most primiparae do not require its use, and it is very rarely given in multiparous cases. Its use is usually reserved for protracted cases, and is avoided in premature cases).

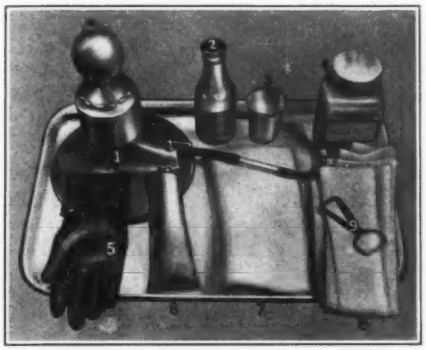

Fig. 3

Analgesia Tray

(1) Instillation apparatus.
(2) Ether oil mixture.
(3) One-ounce measuring glass.
(4) Mineral or olive oil.
(5) Rubber glove for right hand.
(6) Lubricating jelly.
(7) Vulva pad.
(8) Towel.
(9) Bottle opener.

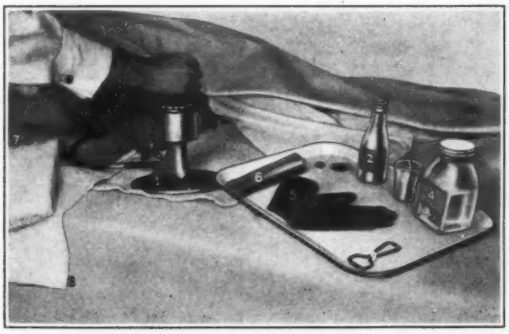

Fig. 4

Instillation of Ether-Oil into Rectum

Note the patient is lying on her left side, hips at the edge of the bed, and the thighs well flexed. The tray is on the foot of the bed, and the soiled glove has been removed.

(3) FORMULA I

Ether .....ounces IISS
Olive or mineral oil.....ounces ISS

FORMULA II

Ether .....ounces IISS
Paraldehyde .....drachms II
Olive or mineral oil.....qs ounces IV

(4) Rectal ether instillation is performed by using the special pressure apparatus (*Fig. 1*).

IMPORTANT POINTS IN TECHNIC

(5) (a) The patient is placed upon her left side with the thighs well flexed and hips brought to edge of bed (*Fig. 4*).

(b) A rubber glove is placed upon the right hand and the anal area and the catheter are freely lubricated with the lubricating jelly (seaweed or tragacanth, not petrolatum).

(c) The catheter is guided past the presenting part with the gloved index finger, making certain that the catheter does not curl. The glove is then removed.

(d) The instillation is started immediately at the conclusion of a uterine contraction.

(6) The patient is advised to pant through her open mouth and not to strain down during the instillation and the first one or two following pains. She is kept upon her left side during this time, and pressure is made over the rectum with a pad.

(7) Rectal ether instillations are repeated as needed, in an hour if really indicated. Analgesia is maximum in about forty minutes, and its usual duration is from two to six hours.

The average multipara requires one or two instillations; the primipara requires two or three. (In long protracted cases as many as seven instillations have been given without ill effect.)

(8) If the case is in extreme active labor when first seen, pentobarbital sodium and

rectal ether are often administered simultaneously.

(9) Frequently in order to maintain a desired amnesia 1½ to 3 grains of pentobarbital sodium are given before and after the morphine (if used) and between the ether instillations as indicated. The total amount per case rarely exceeds 7½ grains.

(10) The labor room is not darkened and is not quieted by plugging the patient's ears, hushing conversation or closing the door.

(11) As a rule the analgesia is augmented during the perineal stage (especially in primiparae) and instrumentation period by inhalation ether, nitrous oxide or ethylene gas anesthesia. Less than one-half of the usual amount of inhalation anesthetic is required and is administered sparingly: Because of the narrow margin of safety, chloroform is not used.

(12) As in dealing with any prolonged form of analgesia, three precautions are kept in mind:

(a) The patient is guarded from falling out of bed.

(b) In protracted cases dehydration and exhaustion are prevented by free oral and intravenous administration of fluids and glucose.

(c) The bladder is observed regularly for over-distention and is emptied by catheter when necessary.

CONCLUSION

It may be stated that the advantages of simplicity of administration, high degree of efficiency, inexpensiveness, extreme safety for both the mother and the infant, equal adaptability to home and hospital use and unusual freedom from contraindications render rectal ether analgesia applicable to practically every woman in labor.

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BLOOD STUDIES IN PRIVATE OBSTETRICAL PATIENTS*

REPORT OF 1,000 CONSECUTIVE CASES

By J. B. ESKRIDGE, JR., B.S., M.D.
and
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During the past few years much has been published concerning the blood changes during pregnancy and the so-called physiological anemia of pregnancy.[1] The conclusions have been drawn that these anemias are the result of pregnancy.

Galloway, *et al.*,[2] show that 47 per cent of the red blood cell counts are less than 3.5 million, while 16.1 per cent are above 4 million. Dieckmann[3] says that the hemoglobin is 10.16 gm. minimum for a normal pregnancy.

The average leukocyte count is usually given as between 10.8 and 12.5 thousand cells per cu. mm.

One cannot always be sure of the economic status of these patients, although we are led to believe that they are for the most part from clinical sources. In our practice our experience has not always coincided with the previously published statistics; thus we are presenting these blood studies from 1,000 consecutive private patients.

RED BLOOD CELLS

As illustrated in *Figs. 1* and *2*, there were 462 patients, or 46.2 per cent, during the first trimester, with a red blood count below 4 million cells, and, of these, 51, or 5.1 per cent, with 3 to 3.5 million cells per cu. mm. A second group of 411, or 41.1 per cent, had from 3.5 to 4 mil-

Cell Count Millions	RED BLOOD CELL COUNT Number of Patients		
	1st Trimester	2nd Trimester	3rd Trimester
3. —3.5	51	78	164
3.5— .4	411	363	471
4 —4.5	312	462	292
4.5+ .5	206	75	46
5+	20	22	27

Fig. 1

*Read in General Clinical Session, Southern Medical Association, Thirty-Second Annual Meeting, Oklahoma City, Oklahoma, November 15-18, 1938.

*From the Department of Obstetrics, University of Oklahoma School of Medicine.

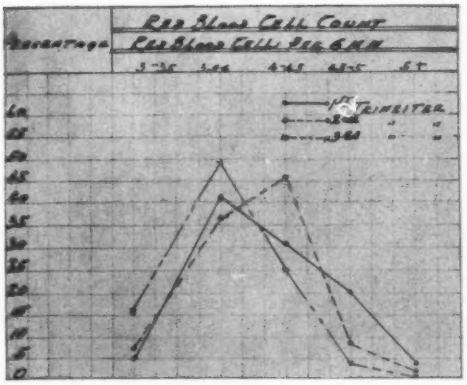

Fig. 2

lion cells. A third group of 312, or 31.2 per cent, had from 4 to 4.5 million cells; while a fourth group of 206, or 20.6 per cent, had between 4.5 and 5 million cells. Twenty, or 2.0 per cent had 5 million cells or above.

Eighteen patients, or 0.18 per cent, of this total number had a slight variation from the normal cell, that of anisocytosis and poikilocytosis, and, where anisocytosis was found, the cells were below normal size. We noted that the majority of these patients were of low economic status.

In the second trimester, 441 patients, or 44.1 per cent, had a red blood count of 4 million or below. In this group, 78, or 7.8 per cent, had 3 to 3.5 million cells, while 363, or 36.3 per cent, had from 3.5 to 4 million cells. The group with 4 to 4.5 million cells comprises 462 patients, or 46.2 per cent, while 75, or 7.5 per cent, had from 4.5 to 5 million cells. Twenty-two patients had 5.0 million cells or above.

In the third trimester there was a definite shift to both extremes: 531, or 53.1 per cent, were below 4 million cells; 164, or 16.4 per cent, had a cell count of 3 to 3.5 million, while 471, or 47.1 per cent, had a red blood count of 3.5 to 4 million. Two hundred and ninety-two, or 29.2 per cent, had a cell count of 4 to 4.5 million; and 173, or 17.3 per cent, had a cell count of 4.5 million or above.

HEMOGLOBIN

All hemoglobin estimations were made by the Sahli method. During the first trimester of pregnancy, 842 patients, or 84.2 per cent, had a hemoglobin of 11.9 to 15.3 gm. per 100 c. c. In this group 320, or 32 per cent, had from 11.9 to 13.6 gm., while 508, or 50.8 per cent, had from 13.6 to 15.3 gm. hemoglobin. One hundred and fifty-eight, or 15.8 per cent, had a hemoglobin between 10.2 and 11.9 gm., while 14, or 1.4 per cent, had a hemoglobin of 15.3 gm. and above.

In the 10.2 to 11.9 gram group there was an increase from 158, or 15.8 per cent, during the first trimester, and 155, or 15.5 per cent, in the second trimester, to 380, or 38 per cent, during the third trimester; while the group which is generally considered normal, 11.9 to 15.3 grams, decreased from 84.2 per cent during the first trimester to 52 per cent during the third trimester. The highest group, 15.3 gm. and above, started during the first trimester at 1.4 per cent and decreased to 0.7 per cent during the third trimester. Thus the majority have still a normal range of hemoglobin, the increase in the lower group being explained by the increased drain on the mother by the fetus at the time of its greatest requirements (*Figs. 3* and *4*).

WHITE BLOOD CELLS

During the first trimester 63.7 per cent of the patients had a white blood cell count between 7 and 10 thousand, while only 15 per cent had a white blood count above 10 thou-

Grams per 100 c. c.	HEMOGLOBIN Number of Patients		
	1st Trimester	2nd Trimester	3rd Trimester
10.2-11.9	158	155	380
11.9-13.6	320	418	391
13.6-15.3	508	416	222
15.3-+	14	11	7

Fig. 3

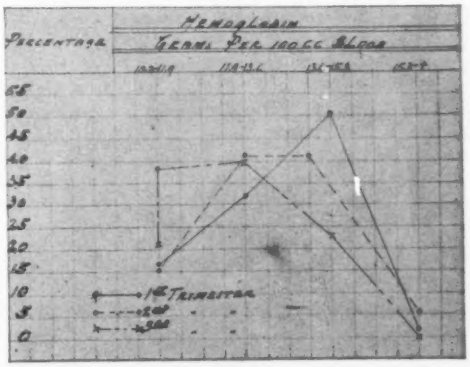

Fig. 4

sand, and in this group 8 per cent had a white blood count between 10 and 11 thousand, 4.2 per cent between 11 and 12 thousand. We did not find any cases with a white blood count above 15 thousand. Also during this trimester, 21.3 per cent had a white blood count of 7 thousand or below. None of these patients showed any clinical evidence of any of the ailments causing a low white count. (See *Figs. 5* and *6.*)

During the second trimester of pregnancy, 59 per cent of the white blood counts were between 7 and 10 thousand; while 27 per cent had a white blood count of 10 thousand or above, and of this number 20.7 per cent had a white blood count between 10 and 13 thousand, and only 6.3 per cent had a white blood count below 7 thousand.

During the third trimester there was a slight shift of the white blood count to the higher group, as only 47.5 per cent were in the 7 to 10 thousand cell count group, while 34.8 per cent were from 10 to 16 thousand, and in the 34.8 per cent group, 32.4 per cent were between 10 and 14 thousand, and 2.4 per cent were above 14 thousand. In the group of 7 thousand and/or below there was practically no change as 17.7 per cent were in this group.

Cell Count, Thousands	WHITE BLOOD CELL COUNT Number of Patients		
	1st Trimester	2nd Trimester	3rd Trimester
4- 5	19	8	12
5- 6	51	61	34
6- 7	143	71	131
7- 8	206	221	155
8- 9	271	216	206
9-10	160	153	114
10-11	80	110	145
11-12	42	63	99
12-13	1	35	52
13-14	3	24	28
14-15	24	16	0
15-16	0	22	13
16+	0	0	11

Fig. 5

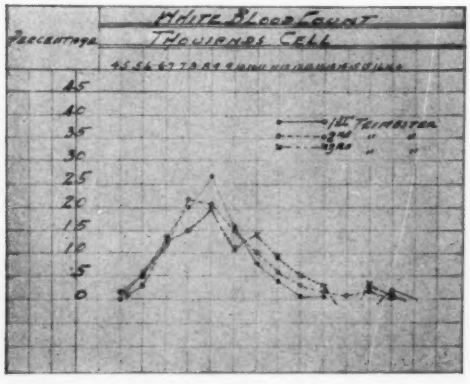

Fig. 6

DIFFERENTIAL WHITE CELL COUNT

Granulocytes.—For purposes of simplicity, we have included the neutrophils, basophils, and eosinophils under the common heading of granulocytes. We found during the first trimester of pregnancy that 69.8 per cent of our patients had a granulocyte count below 70 and 80, while 29 per cent had a count below 70, and 1.2 per cent had a count of 90 or above. During the second trimester of pregnancy there was a slight rise of the 70 to 90 group to 80.8 per cent and a fall of the 70 or below group to 19 per cent, and only 0.2 per cent had a count above 90. During the third trimester of pregnancy the group of 70 to 90 cell count dropped to 64.3 per cent, which is similar to the count of the first trimester. This was also true of the group of 70 or below, which rose to 24.9 per cent, and has findings similar to those of the first trimester. The group of 90 and above cell count also rose to 0.8 per cent. In all patients with a granulocyte count of 90 or above repeated searches were made for signs of infections, but we were unable to locate any clinical evidence of it (*Figs. 7* and *8*).

Cell Cell Count	GRANULOCYTES Number of Patients		
	1st Trimester	2nd Trimester	3rd Trimester
50-60	62	9	28
60-70	228	181	221
70-80	417	407	372
80-90	281	401	371
90+	12	2	8

Fig. 7

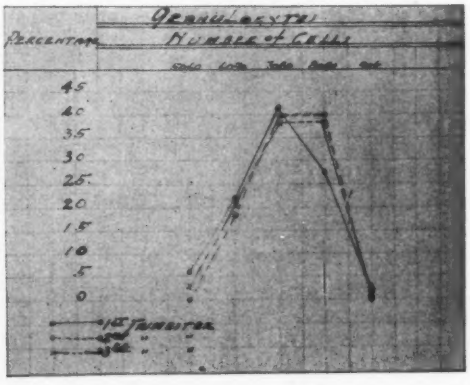

Fig. 8

Non-Granulocytes.—Our findings here were in reverse order to those of the granulocytes; the same variations being noted throughout (*Figs. 9* and *10*).

BLEEDING AND COAGULATION TIMES

During the last month of calculated pregnancy, a routine bleeding and coagulation time is taken on all patients. In the bleeding time those under three minutes comprised 829 patients; those from 3 to 6 minutes comprise 171 patients. In the coagulation time 760 patients had under three minutes, while 240 patients had from 3 to 6 minutes. In a series consisting of over 3 thousand patients, who have had routine bleeding and coagulation times, we have never found a bleeding time over 6 minutes. One case had a 7 minute and one an 8.5 minute coagulation time, the remainder being under 6 minutes. Our findings on platelet counts are incomplete and for this reason we are not recording them (*Figs. 11* and *12*).

BLOOD WASSERMANN REACTION

Among the one thousand patients there were 8, or 0.8 per cent, with positive Wassermann and Kline reactions. Of these, 2 patients had a 1 plus Wassermann and 1 plus Kline; one had 2 plus Wassermann and 2 plus Kline; and one had 3 plus Wassermann and 3 plus Kline; while the remaining four had 4 plus Wassermann and 4 plus Kline. Of these patients, two of the husbands had 4 plus Wassermann and 4 plus Kline, the husbands of the remaining group having negative Wassermann and Kline.

BASAL METABOLISM

In order to show the relationship of basal metabolism to the blood findings, we are first presenting an analysis of the basal metabolic rate range during pregnancy (*Figs. 13* and *14*).

Reporting a total of three thousand basal metabolic rate estimations, 1,952, or 65.1 per cent, were within the normal range (plus 10 to minus 10); 220, or 7.3 per cent, were above normal, and 719, or 23.9 per cent, were below normal. Furthermore, there was no appreciable change in distribution as pregnancy progressed, there being only a slight increase in the number of normal range during the second trimester, and a further slight increase during the third trimester. A small progressive decrease in the minus group during the later trimesters was also noted. There was an increase in the latter

Number of Cells	NON-GRANULOCYTES Number of Patients		
	1st Trimester	2nd Trimester	3rd Trimester
0-10	12	2	8
10-20	281	401	372
20-30	417	407	371
30-40	228	181	221
40-50	62	9	28

Fig. 9

BLEEDING AND COAGULATION TIME

Third Trimester Only
Number of Patients

	0-1	1-2	2-3	3-4	4-5	5-6
Minutes						
Bleeding	16	412	401	111	43	17
Coagulation	67	371	322	172	57	11

Fig. 11

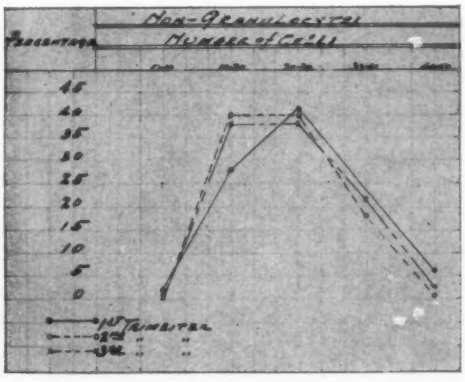

Fig. 10

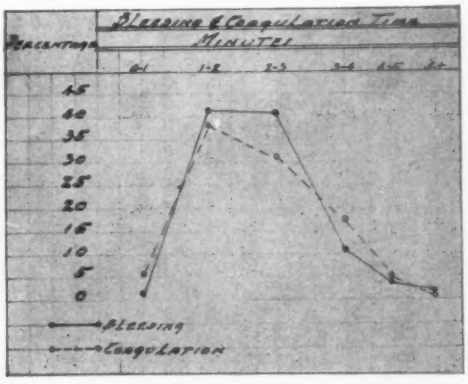

Fig. 12

trimesters on the plus side as pregnancy progressed (*Figs. 13* and *14*).

RELATIONSHIP OF THE RED BLOOD CELLS AND HEMOGLOBIN TO THE BASAL METABOLISM

With reference to the relationship of the normal basal metabolic rate and the red blood cells, there were in the first trimester 293 patients in the 3.5 to 4.0 million cell group and 220 in the 4.0 to 4.5 million cell group. In the second trimester there were 243 patients in the 3.5 to 4.0 million cell group and 292 in the 4.0 to 4.5 million cell group, while in the third trimester there were 366 in the 3.5 to 4.0 million cell group and 192 in the 4.0 to 4.5 million cell group (*Fig. 15*).

B M R Reading	METABOLISM Number of Patients		
	1st Trimester	2nd Trimester	3rd Trimester
+35	0	2	3
+25	0	0	9
+22	0	9	16
+18	11	1	12
+14	14	65	678
+10 to —10	626	637	89
—14	165	123	29
—18	137	86	28
—22	34	45	12
—25	13	32	24

Fig. 13

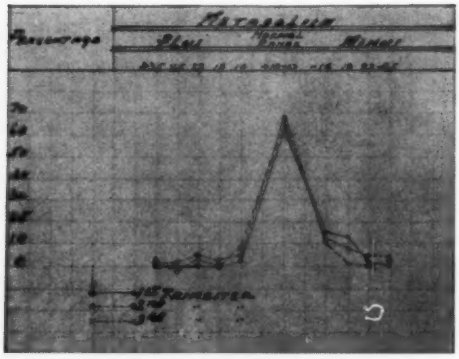

Fig. 14

With regard to the relationship of the normal basal metabolic rate and the hemoglobin, the greatest number of normal range, 312, fall in the 13.6 to 15.3 gm. group, followed by 203 in the 11.9 to 13.6 gm. group. In the second trimester there are 303 in the 11.9 to 13.6 gm. group and 254 in the 13.6 to 15.3 gm. group. This shifts further to 294 in the 11.9 to 13.6 gm. group to 166 in 13.6 to 15.3 gm. group (*Fig. 16*).

DISCUSSION

During the first trimester of pregnancy, our statistics show that 53.8 per cent of the patients had a red blood count of 4 million cells or above, and 46.2 per cent had a red blood count below 4 million. This increased during the second trimester to 55.9 per cent having 4 million or above cell count and 44.1 per cent below this amount. In the latter group, 7.8 per cent were below 3.5 million cells. A decrease was noted during the third trimester, with 46.9 per cent having a red blood count above 4 million, and 53.1 per cent below 4 million. Of this latter group, there were 16.4 per cent below 3.5 million cells.

Eighty-four and two-tenths per cent had a hemoglobin of 11.9 to 15.3 gm. (the so-called

RELATIONSHIP OF RED BLOOD CELL COUNT TO BASAL METABOLISM

R B M Basal Metabolism Rate	Number of Patients														
	1st Trimester					2nd Trimester					Third Trimester				
	3-3.5	3.5-4	4-4.5	4.5-5	5+	3-3.5	3.5-4	4-4.5	4.5-5	5+	3-3.5	3.5-4	4-4.5	4.5-5	5+
+35	0	0	0	0	0	0	1	0	1	0	5	7	0	0	0
+22	0	0	0	0	0	0	6	3	0	0	3	0	8	5	0
+18	11	0	0	0	0	0	0	0	1	0	0	12	0	0	0
+14	0	0	8	6	0	0	24	41	0	0	31	17	19	11	0
+10 to —10	21	293	220	82	10	50	243	292	31	21	84	366	192	34	13
—14	0	73	67	13	0	0	58	52	13	0	0	56	49	0	14
—18	0	37	51	49	0	22	33	21	10	0	16	12	0	0	0
22	0	10	11	13	0	0	0	32	13	0	12	0	0	0	0
25	0	9	4	0	0	0	9	23	0	0	13	0	11	0	0

Fig. 15

RELATIONSHIP OF HEMOGLOBIN TO BASAL METABOLISM

H G H / B M R	Number of Patients															
	1st Trimester					2nd Trimester					3rd Trimester					
	8.6-10.2	10.2-11.9	11.9-13.6	13.6-15.3	15.3+	8.6-10.2	10.2-11.9	11.9-13.6	13.6-15.3	15.3+	8.6-10.2	10.2-11.9	11.9-13.6	13.6-15.3	15.3+
+35	0	0	0	0	0	0	1	1	0	0	0	3	0	0	0
+25	0	0	0	0	0	0	0	0	0	0	0	5	4	0	0
+22	0	0	0	0	0	0	0	25	0	0	2	1	7	6	0
+13	2	9	0	0	0	0	0	1	0	0	0	0	12	0	0
+14	0	0	9	6	0	0	0	31	34	0	19	28	21	10	0
+10—10	0	90	203	312	20	0	62	303	254	18	42	176	294	166	11
—14	0	31	63	71	0	0	26	25	72	0	29	37	35	28	0
—18	0	12	34	91	0	0	55	0	31	0	0	29	0	0	0
—22	0	11	13	10	0	0	0	24	21	0	0	12	0	0	0
25	0	0	8	5	0	0	7	13	0	12	0	0	11	13	0

Fig. 16

average group) in the first trimester, which remained at 84.5 per cent during the second trimester, and decreased to 52 per cent during the third trimester. The group of 10.2 to 11.9 gm. increased from 15.8 to 15.5 to 38.0 per cent. The highest group of 15.3 gm. and above showed only 0.7 per cent change throughout the entire course of pregnancy, despite the fact that the greatest drain by the fetus on the mother is at its height during the third trimester.

We were unable to observe any appreciable change in the white blood cell count throughout the course of pregnancy, with one exception, that there was a slight gradual increase in the percentage of patients who had a white blood cell count above 10 thousand during the third trimester. The marked rise which many authors speak of as labor approaches was absent in our series.

The predominant granulocyte percentage was between 70 and 80 during the first trimester, and between 70 and 90 during the second and third trimesters.

The reverse order was thus true of the non-granulocytes.

During the third trimester, 80.9 per cent had a bleeding time under 3 minutes, the maximum being 6 minutes; 76 per cent during the third trimester had a coagulation time under 3 minutes, the maximum being 8.5 minutes.

Taking the normal basal metabolic rate as an index of the patient's well being, it can be observed that in the first trimester the greatest number, 293, fall in the 3.5 to 4.0 million cell group; in the second trimester this follows the 4.0 to 4.5 million cell group; whereas in the third trimester this follows the lower group again of 3.5 to 4.0 million cells. From these figures the normal red blood count may be taken as 3.5 to 4.0 million in the first trimester, 4.0 to 4.5 million in the second trimester, and 3.5 to 4.0 million in the third trimester.

In the same manner, comparing the relationship of the normal basal metabolic rate with hemoglobin content, the normal hemoglobin may be taken at 13.6 to 15.3 gm. in the first trimester, dropping gradually to 11.9 to 13.6 gm. in the third trimester.

CONCLUSIONS

(1) One thousand consecutive private obstetrical patients are presented for blood studies.

(2) The average red blood cell count increased from 3.5 to 4.0 million cells during the first trimester to 4.0 to 4.5 million during the second trimester, then decreasing to 3.5 to 4.0 million cells during the third trimester.

(3) Eighteen one-hundredths per cent showed slightly abnormal red blood cells.

(4) No red blood cell count below 3 million was noted in the series.

(5) The average hemoglobin estimation (Sahli method) decreased gradually from 13.6 to 15.3 gm. during the first trimester, to 10.2 to 11.9 gm. during the third trimester.

(6) Nine and two-tenths per cent had a hemoglobin from 8.6 to 10.2 gm.

(7) The average white blood count throughout the entire pregnancy was between 7 and 9 thousand.

(8) The average granulocyte count was between 70 and 80 per cent during the first trimester and between 70 and 90 per cent during the second and third trimesters. The reverse of this was true for the non-granulocyte percentage.

(9) The average bleeding time was 1 to 3 minutes, the maximum being 6 minutes.

(10) The average clotting time was 1 to 3 minutes, the maximum being 8.5 minutes.

(11) Eight-tenths per cent in the series had a positive Wassermann and Kline reaction.

(12) Using the normal basal metabolic rate as one of the indicators in the consideration of well being, the normal red blood count may be taken as 3.5 to 4.0 million in the first trimester, 4.0 to 4.5 million in the second trimester, and 3.5 to 4.0 million in the third trimester.

(13) In the same manner the normal hemoglobin may be taken as 13.6 to 15.3 gm. in the first trimester, dropping gradually to 11.9 to 13.6 gm. in the third trimester.

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105 Osler Bldg.

PRIMARY CARCINOMA OF THE BRONCHUS*

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Primary carcinoma of the bronchus is not a rare disease; it comprises from 6 to 8 per cent of all carcinomas. In frequency it ranks next to malignancies of the gastro-intestinal tract. Twenty years ago only 5 per cent of the cases were diagnosed clinically. Today, about 50 per cent are recognized during life. After a ten year study of this subject, Arkin and Wagner[1] are convinced that at least 90 per cent of the cases can be diagnosed correctly.

There are those who feel that primary carcinoma of the bronchus is increasing, notwithstanding the probability that improved methods of diagnosis are in some measure responsible for the definite increase in the number of recorded cases. It is true that primary carcinoma of the bronchus has been found somewhat more frequently in association with pneumoconiosis. Martland[2] believes that this is due to the inhalation of radio-active substances.

The fact remains that pulmonary malignancy has alarmingly increased within the last ten years. It is difficult to determine whether this increase is absolute or relative, but it is a fact that the greater number of cases in which malignancy of the tracheobronchial tree has been recognized in the last few years is doubtless due to the more frequent roentgen examination of the chest and the greater facility in the use of the bronchoscope.[3] Clerf[4] says that bronchoscopy is the most definite and positive diagnostic procedure available, but is limited to growths of the larger bronchi.

The clinician who is familiar with the pathological and clinical manifestations of primary lung carcinoma can recognize most cases from the history, physical examination, and the roentgen study. The radiograph is indispensable and valuable information can be obtained from it. In some cases bronchoscopic examination, injection of iodized oils, or a diagnostic artificial pneumothorax often gives valuable data and may aid in differentiation of those inconclusive lesions found on the radiograph.

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*Chairman's Address, Section on Radiology, Southern Medical Association, Thirty-Second Annual Meeting, Oklahoma City, Oklahoma, November 15-18, 1938.

The sputum should be carefully examined for tumor tissue; the patient should be instructed to save any unusual substances that may be expectorated. The diagnosis can be confirmed by a biopsy of the frequently enlarged cervical or axillary lymph nodes, by microscopic examination of pleural exudate, or by removal of a piece of tissue from the bronchus.

The bronchoscopist has learned to differentiate many types of lesions and has also learned the necessity of removing tissue for microscopic study. He may eliminate the possibility of bronchial carcinoma, also foreign bodies, and will undoubtedly produce better drainage if there be an atelectasis. By bronchoscopic examination and roentgen study it is possible to recognize primary bronchial carcinoma at an early stage if the clinical symptoms are such that the disease may be suspected and its possibility considered. Exploratory thoracotomy is justifiable and indicated where other means fail to complete the diagnosis.

The failure to recognize lung carcinoma more frequently can be attributed in part to the great variations in the symptoms of this disease. The symptoms depend upon the location and size of the primary tumor, the secondary changes, and the influence upon adjacent structures. In about 15 per cent of all cases the primary tumor produces no signs or symptoms.

The possibility of a primary bronchial carcinoma should always be considered in any case where signs of intrathoracic inflammation persist, such as tracheobronchial irritation that is unusually prolonged, or when a pneumonia becomes classified as unresolved, or when tracheitis, bronchitis, bronchopneumonia, massive lobar involvement, atelectasis or pulmonary abscess are present and persistent. These findings are due either to an infiltration brought on by interference with bronchial drainage or by atelectasis from blocking of a bronchus that may be due either to intrinsic or extrinsic involvement. One must bear in mind that any condition showing signs of pulmonary inflammation, such as tuberculosis, must be eliminated. Confusion may arise in the differentiation of tuberculosis from malignancy; it is a fact that malignancy of the lung is not uncommonly preceded by pulmonary tuberculosis.

There is no definite group of signs or symptoms that can be considered premonitory of primary bronchial carcinoma. The onset is usually insidious. The early symptoms are important, as the correct interpretation of them will lead to an early diagnosis. The diagnosis made when the carcinoma is advanced is of statistical value only; from the patient's standpoint it is of little or no importance. It was well stated by Tuttle and Womack[6] that,

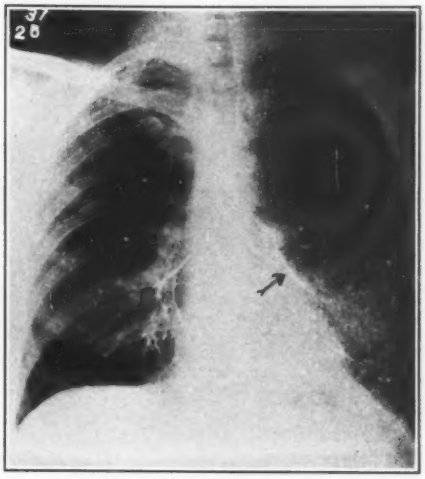

Fig. 1, Case 1
Iodized oil injection shows constriction and obstruction to the main lower left posterior bronchus.

Fig. 2, Case 1
Primary carcinoma of the bronchus. Note carcinoma in lower left division of the primary bronchus and its extension into the lung.

"in the diagnosis of cancer any method that requires metastasis before it can be utilized may as well be discarded so far as the welfare of the patient is concerned."

Bronchial carcinoma is more common in the upper lobe of the right lung. The typical location of these tumors is in the larger bronchi near the hilus, but occasionally they begin in the smaller, more peripheral bronchi. In a few cases there appears to be a diffuse infiltration of the parenchyma of the lung. The lesion should always be considered in a patient who has had a long, irritating, non-productive cough, the result of bronchial irritation. The cough usually fails to respond to treatment and often interferes with sleep. If it is associated with blood-streaked mucoid sputum, in the absence of tuberculosis, the possibility of a primary bronchial carcinoma must be seriously considered.

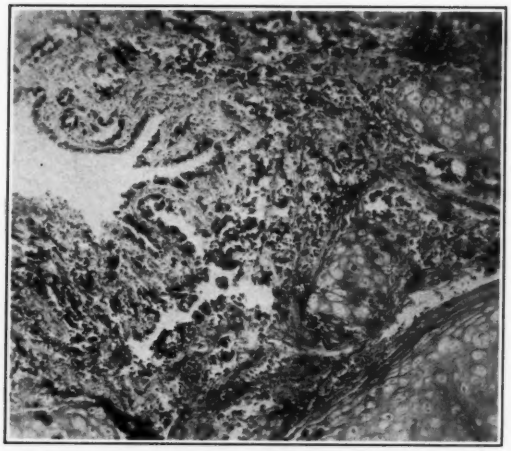

Fig. 3, Case 1

Photomicrograph of primary carcinoma of a bronchus. Section of large bronchus showing small lumen partially lined with columnar epithelium; oat cell cancer cells in submucosa and the bronchial cartilage.

Diffuse, purulent expectoration is indicative of extensive bronchial infection, the result of bronchial obstruction with retention and secretion. This cannot be interpreted as an early symptom. Hemoptysis may occur early or late and varies in amount from very slight to frank hemorrhage. In addition there may be loss of weight and strength, anorexia, night sweats, thirst, fatigue, fever, dyspnea, cyanosis, pleural effusion, either clear or bloody, and it is interesting to note that wheeze, as a symptom of early cancer, is not often mentioned in the medical literature.[7,8] One observes, however, that asthma is often considered as a diagnostic possibility. Wheeze is a common symptom of partial obstruction to a bronchus and is continuous, being influenced by cough and deep inspiration and often is not noticed by the patient. It is best heard during and at the end of expiration when the bronchus normally becomes narrowed. A wheeze, with cough and occasionally blood-streaked sputum, constitutes very strong evidence of new

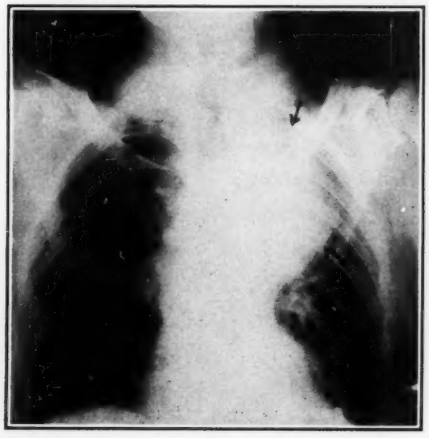

Fig. 4, Case 2

Extensive atelectasis of the upper left lung field secondary to primary carcinoma of a bronchus.

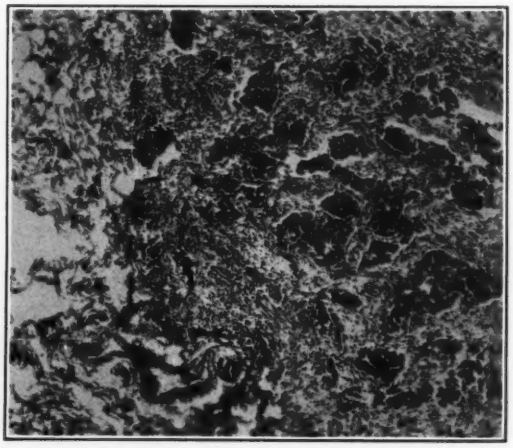

Fig. 5, Case 2

Photomicrograph of primary carcinoma of a bronchus. Sections of mass in lung showing well differentiated epithelium in alveolar arrangement.

growth, producing early partial obstruction to a bronchus.

If in addition there is a demonstrable atelectasis, it necessitates the differentiation of acute inflammatory and infectious diseases, metastatic changes secondary to a silent primary growth elsewhere in the body, and also benign lesions of the bronchus, the most common being cysts, adenomas and angiomas. More rarely found are lipoma, fibroma and chondroma. Farrell[5] says that atelectasis is the most common roentgenographic finding and when present implies a bronchial obstruction. Pain is not a common early manifestation of carcinoma originating in the larger bronchi. It is, however, considered as "the most common signal symptom" of peripheral carcinoma and is due to peripheral extension of the growth to the pleura and extrapleural structures.[9]

Pain[5] ranks as the third most frequently encountered symptom; its character and location vary, and it is not ignored by the patient over so long a period of time as are other symptoms in primary carcinoma of the bronchus. In some patients it occurs as a constant dull ache, while in others it is intermittent, recurring and often severe. In a few cases pain has been reported as the initial symptom and in our case reports we wish to call to your attention the complaint of pain in the low back as the initial symptom in three cases.

Case 1 (No. 35825).—F. L., a man, aged 38, entered Research Hospital March 2, 1937, complaining of low back pain with bilateral, sciatic distribution. The pain had been continuous for fifteen months; hemoptysis had been intermittent for ten months; there had been inspiration pain in the right chest for eight months. In June, 1936, a diagnosis of pneumonia was made from a roentgenogram of the chest and in September, 1936, a diagnosis of basal tuberculosis was made The patient remained in bed for five months and improved symptomatically; radiographically the lesion was more extensive.

Physical examination showed his temperature to be 99.2°; pulse 100; respiration 24; there were no abnormal lung findings; there were bilateral sciatic tenderness and slight secondary anemia.

On March 5, 1937, bronchoscopic examination revealed some compression of the posterior branch of the lower left main bronchus. We were unable to obtain a biopsy. Injection of iodized oil revealed a definite narrowing of this bronchus. Radiographic findings were those of a bronchial obstruction due to primary carcinoma of the bronchus.

On March 22, the patient developed a persistent, dry cough. Bronchoscopic findings were the same as previously. Following this, extensive x-ray therapy was given over the site of the occluded bronchus with considerable symptomatic improvement. The patient was discharged from the hospital and five months later reentered. At this time the radiographic examination

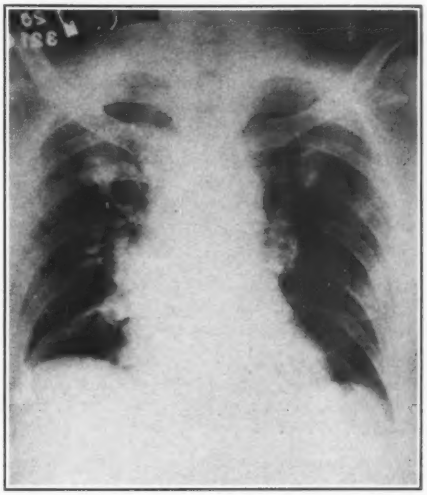

Fig. 6, Case 3
Dense hilar structures on right side with retraction of lower right lung field, indicating a bronchial obstruction.

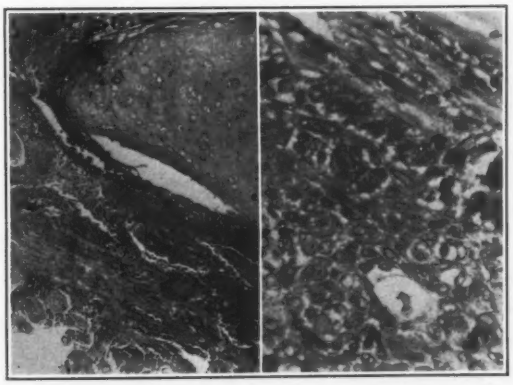

Fig. 7, Case 3
Photomicrograph of primary carcinoma of a bronchus. To left, portion of bronchus showing growth in the submucosa. To right, undifferentiated cell type growth in submucosa.

showed a pneumothorax on the right side. The patient had marked cyanosis, developed a pneumonic condition and died.

At autopsy the lungs in cut section revealed a curious riddling with small, thin walled cavities containing a bloody material. The bronchus to the lower left lobe was partially occluded by a tumor mass.

Microscopic study showed widespread carcinomatous infiltration with metastasis in the right lung and the adrenal gland.

Case 2 (No. 36904).—H. O. L., a man, aged 48, had complained of severe lumbosacral pain with right sciatic distribution over a period of several months. Teeth were extracted without relief. Physical examination was essentially negative except for tenderness over sciatic region on the right side.

Radiographic examination of the chest revealed an atelectasis of the upper left lobe and at autopsy a primary carcinoma of the upper left bronchus was found with metastatic involvement to the right lung, liver and adrenal glands.

Case 3 (No. 32107).—H. R. M., a man, aged 62, four weeks previous to admission to hospital began complaining of pain in the lumbar region with bilateral radiation along the course of the sciatic nerve.

Examination revealed palpable cervical nodes, tenderness over the lower lumbar vertebrae and both sacroiliac regions, an occasional white blood cell in the urine and secondary anemia.

X-ray examination of the chest revealed dense hilar nodes on the right side with slight atelectasis, suggesting primary carcinoma of the bronchus. The patient's condition became gradually worse and he expired six months after entering the hospital.

Autopsy showed primary carcinoma of the bronchus with metastasis to adrenal glands and the third lumbar vertebra.

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THE THERAPEUTIC USE OF HELIUM*

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A. A. WEARNER, M.D.
and
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Helium was first discovered in the atmosphere of the sun by Jannsen and Lockyer by means of the spectroscope in 1868, many years before it was found on earth. Its presence in the air was first demonstrated spectroscopically by Kayser, in 1894. In 1895, Ramsey and Travers found it in the mineral cleavite, and later in some rare minerals. Its most important source was discovered by Cady who found it in natural gas in Kansas. The natural gas wells richest in helium are found in Kansas, Texas, Oklahoma and Colorado, some of which contain up to 2 per cent of the element. These are owned and controlled by the United States Government, all helium becoming the property of the Government. By means of the Jeffries Norton and the Linde processes, the helium is separated from the other constituents of the natural gas. In this process, compression and extraction of heat from the gas mixture lowers the temperature until at a temperature of 195 degrees below zero Centigrade all constituents of the natural gas except helium, have liquefied and the helium is then drawn off.

Helium is a monatonic gas; colorless, odorless and chemically inert. It has a molecular and atomic weight of 4 and, with the exception of hydrogen, is the lightest gas known. It is without exception the most difficult gas to liquefy, requiring a temperature of about 270 degrees below zero Centigrade. The general value of the gas is due to its low specific gravity and complete noncombustibility.

The following graph compares the specific gravity and molecular weights of helium with the other gases and gas mixtures with which we are concerned in its therapeutic use (*Fig. 1*).

As can be seen from this chart, it is about one-eighth as heavy as oxygen and one-seventh as heavy as nitrogen. A mixture of 79 per cent

*Read in Section on Anesthesia, Southern Medical Association, Thirty-Second Annual Meeting, Oklahoma City, Oklahoma, November 15-18, 1938.

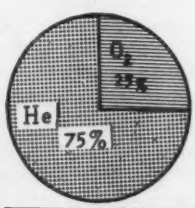
	Molecular Weight	Specific Gravity
	4	0.138

	32	1.105

	28	0.967

(air)	28.8	1.000

	9.6	0.341



	11.0	0.380

Fig. 1

helium and 21 per cent oxygen is about one-third as heavy as air. The basis for the medical use of helium depends entirely on its physical properties of low specific gravity and rapid rate of diffusion.

In 1923, Charles Cooke registered a patent for the use of helium-oxygen mixtures for divers based on the fact that helium has a coefficient of solubility about half that of nitrogen and twice as diffusible. In 1923, Sayers and Yant demonstrated that animals could be decompressed from helium-oxygen mixtures in one-third to one-fourth the time required when nitrogen-oxygen mixtures were used. This suggested its use in caissons. In 1929, Hershey concluded from experiments on small animals that atmospheres from which rare gases are excluded are incompatible with life. This was disproved, however, by Barach, as well as by Orcutt and Waters, who demonstrated that animals are not affected by the absence of the rare gases. Barach further demonstrated that helium itself is not harmful to life, in helium-oxygen mixtures, thus verifying other evidence of the physiological inertness of helium.

We owe much to Barach, the pioneer in helium gas therapy, for blazing the trail in the useful application of helium in the field of medicine. Applying the old physical formula, F=MA (force equals mass times acceleration), he reasoned that the force required to move a column of gas to and from the lungs is proportional to the molecular weight of the gas, other factors being constant. Therefore if a lighter gas mixture such as helium 79 per cent and oxygen 21 per cent, were substituted for air (nitrogen 79 per cent and oxygen 21 per cent), a proportional decrease in respiratory effort should result. This he tried in a series of twenty cases of cardiac disease which were compensated at rest, but dyspneic on exertion. He found a decrease of 25 to 50 per cent in inspiratory and expiratory pressure, a decrease in total pulmonary ventilation and a comparable reduction in respiratory effort.

Since the velocity of gas mixtures through small orifices is proportional to the square root of their molecular weights, a mixture of helium 80 per cent and oxygen 20 per cent would require but one-half the pressure or effort to breathe of that of air. This suggested the use of helium-oxygen mixtures in obstructive lesions of the larynx, trachea or bronchioles. By experiment he found that when normal individuals breathed through the orifices constricted to

three thirty-seconds inch, the respirations became slow and the tidal volume and tracheal pressure increased. When 100 per cent oxygen was substituted for air, no distinct changes were observed either objectively or subjectively. However, when a mixture of 80 per cent helium and 20 per cent oxygen was substituted, the pressure of the pulmonary airway was lowered 50 per cent, the respiratory rate approached normal, the tidal volume decreased and the dyspnea was largely relieved. He used helium-oxygen mixtures in obstructive conditions of the trachea, larynx and bronchi and found that it could compensate for a 50 per cent obstruction to the lumen and in some cases could obviate the need of tracheotomy. It also relieved dyspnea in cases of obstructions below the trachea where tracheotomy would obviously be of no avail.

Barach also proved the value of helium-oxygen mixtures in the treatment of status asthmaticus, a condition in which epinephrine gives no relief. He found that the period of relief obtained by the respiratory system as a whole tends to initiate bronchial dilatation and that the recovery of the effectiveness of epinephrine depends on the severity of the case and the length of time helium-oxygen mixtures have been used. From his experience in treating asthmatic cases, he concludes that helium is useless when epinephrine is effective, and that it is useful only in cases which have become refractory to the drug. It therefore cannot be used as a substitute for epinephrine, but is of inestimable value in restoring effectiveness of the drug.

Its value has also been demonstrated in emphysema, bronchiectasis and pulmonary fibrosis. Lahey has suggested its use in collapse of the trachea during thyroidectomy and cases of large deep intrathoracic goiter where distortion of the trachea makes introduction of an intratracheal catheter practically impossible. With signs of marked respiratory depression and oncoming paralysis in high spinal anesthesia, Saklad has used a helium-oxygen mixture because of the lessened respiratory effort required. Sise used this same mixture and added cyclopropane for anesthesia where respiratory obstruction was present. Eversole reports the use of 75-25 per cent mixture of helium-oxygen in combatting stridor during anesthesia with complete relief in 61.5 per cent and partial relief in 33.3 per cent more. He reports almost equal success in cases of obstruction from hemorrhage, tracheal compression, edema and laryngospasm.

We have used helium in most of these conditions with similar satisfactory results. All of our gas machines are equipped with helium and we find numerous occasions in obstructive conditions where its use is of marked benefit and at times a life-saving measure. Our small contribution to this literature comes from the simplicity and economy of our method of using helium-oxygen in status asthmaticus and in extending its use to other conditions.

Let us consider the picture of a case of status asthmaticus, a condition in which the patient is refractory to epinephrine. There is a terrifying and exhausting dyspnea with attendant tissue anoxemia giving rise to a viscious chain of events. There is an increase in negative intrapleural pressure and a disproportion between the output of the two ventricles resulting in increased capillary blood pressure impeding the return flow of the blood from the lungs, decreasing cardiac output from the left heart. This increases the load on the right heart, and because of the increased pulmonary pressure, there is intra-alveolar hemorrhage, pulmonary edema, progressive anoxemia and finally respiratory and cardiac failure. When one sees this viscious cycle and knows it can be broken with helium-oxygen, one wonders why it is not in more common use. Until recently the expense was a major obstacle. It was used in a tent similar to an oxygen tent, the gas mixture being supplied by a continuous flow from tanks containing definite percentages. The resulting waste of the costly mixture made its use almost prohibitive to the average patient. Only since January 1, 1938, has the price of helium been reduced by the Government and the supply made adequate. Schwartz uses a small head tent connected with a closed circuit, the purpose presumably being to economize gas. This was the idea which motivated us to have built for us a small portable outfit for use with a closed circuit. The portability made it available to the patient too gravely ill to be moved from his home and the economy made it available even to the patient in very modest circumstances (*Fig. 2*).*

It must be emphasized, however, that the administration of helium is dangerous when given by incompetent or untrained persons. The administrator must be well acquainted with the closed circuit system and the physiologic principles involved. An untrained person might give oxygen by means of an oxygen tent, for example, with relative safety because there is

*This portable machine is made by the Foregger Company, of New York, N. Y.

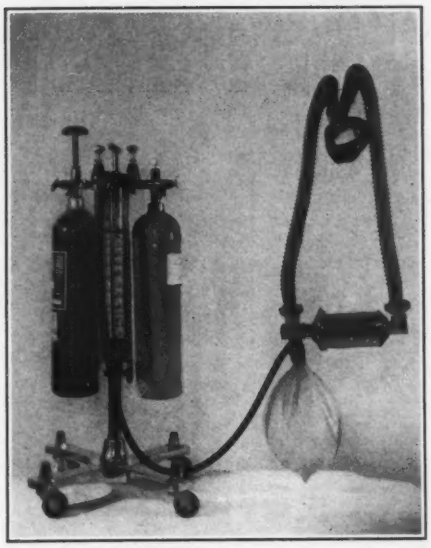


Fig. 2

little danger of asphyxia by such a procedure. In helium therapy, however, improper administration might not only be valueless but jeopardize the life of the patient by asphyxia. To be effective, nitrogen must be rigidly excluded because it defeats the purpose of the helium by increasing the weight of the mixture. Care must be taken to supply sufficient oxygen continually for metabolic needs. When a closed circuit is used positive pressure should be applied to the rebreathing bag during inspirations so that the patient is not compelled to breathe against the resistance in the circuit. The patient is already breathing with great difficulty and gentle positive pressure during inspiration not only renders breathing easier, but aids the gas mixture in penetrating alveoli which have become more or less blocked by mucus and by bronchial spasm.

The administrator must first obtain the confidence and cooperation of the patient who, because of his extreme dyspnea, would otherwise object strenuously to having a mask placed over his face. The method and purpose of the procedure should be explained as well as the expected results. It must be made clear that the results are not immediate as when epinephrine was used before he became refractory to the drug. By encouragement he will willingly cooperate in administration.

Our method consists of first filling the bag with the mixture, usually 75 per cent helium and 25 per cent oxygen. After a few minutes of use we empty and fill again. This is done two or three times to crowd out nitrogen from the circulation, replacing it with helium. Now the patient is allowed to breathe this mixture under positive pressure for a varying length of time. At first he may not tolerate it more than a few minutes. It should not be continued if the patient objects, but he should be encouraged to try it again later. Usually ten or fifteen minutes is long enough for each application. Applications are spaced at first one to three hours apart, increasing the time interval each time. The patient usually notices no improvement until the second or third application, after which objective and subjective improvement becomes obvious. Five or six such applications are usually sufficient, the recovery being gradual over a period of eight to eighteen hours. The length of this recovery period varies with the patient and the severity of the case. In our experience, however, this recovery period is not appreciably shortened by making the treatments more frequent.

Now let us consider the change in the clinical picture brought about by this treatment. After each application the asthmatic patient's breathing becomes easier and his color improves. His cough now becomes productive of large amounts of mucus. His anxiety is greatly relieved and periods of light sleep often follow, giving rest from the fatigue of many hours of conscious effort to breathe. His high temperature and pulse rate gradually lower, usually becoming normal within twenty-four hours. This is illustrated by the following clinical chart of an actual case (*Fig. 3*).

After complete recovery, should another attack occur it can almost invariably be controlled by epinephrine since he is now no longer refractory to the drug. Effort can now be made to determine the underlying cause of the attacks, such as foci of infection, sensitivity to foods, etc.

We have also verified the results of Barach on the uselessness of helium in asthma, which is controllable by epinephrine. When administered during an attack in these cases, the patient's cyanosis disappears and breathing becomes somewhat less difficult, but the duration and frequency of the attacks are in no way altered. In borderline cases where the patient is partially refractory to epinephrine, helium administration will again restore the effectiveness of the drug, after which the gas is of no further value.

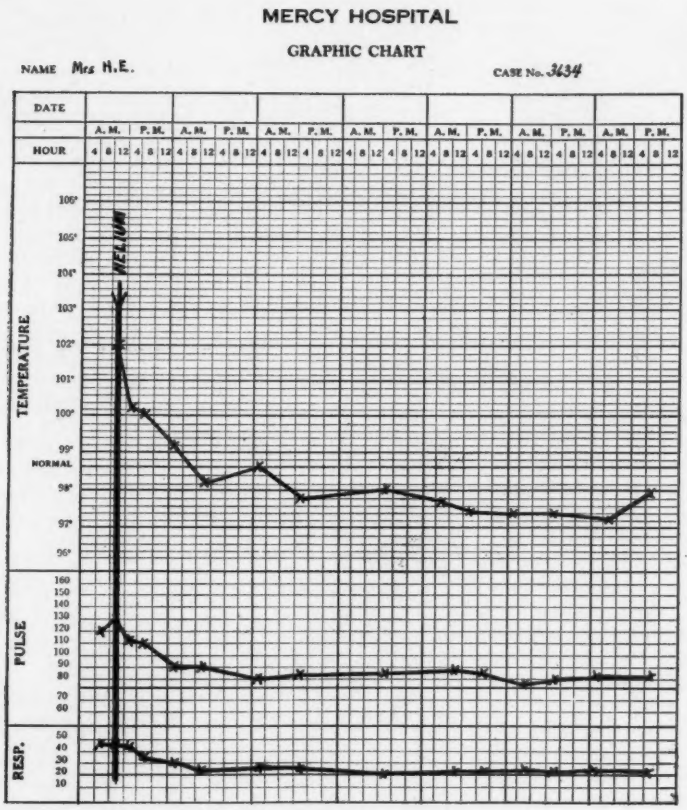


Fig. 3

The limitations of the usefulness of helium in these cases must therefore be borne in mind lest the physician, as well as the patient, become discouraged in its use and fail to use it in properly chosen cases where it may be a life-saving measure.

By animal experimentation Lemmer and Rovenstine determined the rate of absorption of various alveolar gases and showed the value of air as a vehicle for carbon dioxide in hyperventilating patients recovering from surgical anesthesia. Of all the gases which they used in their experiments, however, helium showed the slowest rate of absorption which suggests the superiority of helium-oxygen mixtures as a vehicle for carbon dioxide. Theoretically it would be of value in the prevention of postoperative atelectasis. We are convinced of its value in the treatment of postoperative atelectatic conditions. We have used it in a number of cases and in no case have we had anything but a one hundred per cent recovery and that very promptly.

We have also used it in a few cases of unresolved pneumonia of several weeks' standing. In these cases resolution was brought about in from forty-eight to seventy-two hours of treatment. As far as we know, helium-oxygen has not yet been tried in active pneumonia, but with the lessened muscular exertion and respiratory effort the better oxygenation and lessened load on the right heart brought about by its use, better results would no doubt be obtained than with the oxygen tent.

We believe that the present known uses of helium in the field of medicine are only suggestions of its possibilities and that further study and experimentation will bring to light many more conditions in which its use is beneficial.

SUMMARY

(1) Medical use of helium is based entirely on its low specific gravity and rapid rate of diffusion.

(2) Its use is of particular value in status asthmaticus in which

(a) It restores the effectiveness of epinephrine.

(b) Its administration need not be continuous.

(c) Improvement is not immediate, but requires several hours.

(d) The recovery period is not appreciably shortened by more frequent treatments.

(3) Helium-oxygen is of value in conditions obstructive to breathing.

(4) It is of value in prevention and treatment of postoperative atelectasis.

(5) In unresolved pneumonia it aids in bringing about resolution.

(6) Helium-oxygen mixtures require less effort to breathe than air and are therefore of value in conserving the patient's energy in many conditions such as cardiac decompensation, pneumonia, failing respiration in high spinal anesthesia, and so on.

(7) Its administration must be intelligently given to be effective and safe from the danger of asphyxia.

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DISCUSSION (*Abstract*)

Dr. H. E. Doudna, Oklahoma City, Okla.—My personal experience with the use of helium has been very limited and served mainly to emphasize the need of first-class equipment if the gas is to be used with any degree of satisfaction or efficiency. Because of its extreme diffusibility, helium will be so rapidly lost from many of the older appliances and tents that the results obtained will be almost negligible unless a very rapid flow of the gas is maintained.

If a tent is to be used for the administration of helium, great care must be exercised in the prevention of leaks around the edges of the tent. The motor blowers, gaskets, and so on, must be carefully checked for leaks. Small head tents are more satisfactory and much more economical than the large tents for use with helium.

As Dr. Wearner mentioned, the face mask will be more satisfactory than either type of tent if the helium-oxygen mixtures are to be used for relatively short periods of time. The greatest economy is of course obtained when the patient is made to rebreathe through soda-lime. If such a system could be made absolutely leak-proof, once the nitrogen had been eliminated from the system and the desired concentrations of helium and oxygen established, it should be necessary to add only enough oxygen to meet the patient's metabolic requirements. However, because the helium is readily lost, it will be necessary in most instances to add additional amounts of helium from time to time.

This brings up the advisability of having at hand some means of determining quickly and easily the concentrations of helium and oxygen in the inspired atmosphere. Instruments are available by which such tests can be made in a few minutes' time. Without a frequent check on the gas concentrations being administered the maximum therapeutic effect may not be obtained, or the patient might possibly be endangered by the lack of sufficient oxygen in the atmosphere he is breathing. The use of helium-oxygen mixture from a single tank would seem to obviate some of these difficulties.

However, it will be desirable to vary the concentrations of helium and oxygen in certain cases, which can be done only by having the gases in separate tanks. Barach reports that some of his asthmatic patients obtained the greatest symptomatic relief when the oxygen was reduced to as low as 15 per cent in 85 per cent helium. In such cases there was an increase in the degree of cyanosis, but this seemed to be overbalanced by the greater relief from the dyspnea. A higher concentration of oxygen could soon be administered in these cases.

On the other hand, certain patients with upper respiratory tract obstruction obtained the maximum benefit with oxygen concentrations of 30 per cent in 70 per cent helium.

I believe Dr. Wearner and his associates have been giving the helium-oxygen treatments for shorter intervals than described by Barach. I should like to ask whether or not they have tried using the longer periods of treatment, and if so, how the results compare with the two methods.

The use of helium-oxygen mixtures in the treatment of unresolved pneumonia has not, I believe, been reported before. The results in the few cases mentioned suggest that this may be a valuable means of therapy for this condition. It is to be hoped that further work along this line will be equally successful.

Dr. R. F. Bonham, Houston, Tex.—Barach proved that helium had no deleterious effect upon the body. Eversole reported keeping white mice alive in a mixture of 21 per cent oxygen with 79 per cent helium for a period of three months with no deleterious effect whatsoever. I have given helium to several hundred cases and have had the nurse or even the patient's relatives give it with no untoward results. However, the technic of its administration might bring other factors in to make it dangerous.

I should not recommend hyperventilation of the lungs nor giving it under positive pressure, for various reasons: for example, the alveoli might be stretched to the point of hemorrhage or of relighting an old tuberculosis. However, I should recommend washing out the lungs with helium and oxygen gently both for thera-

peutic treatment and during or following anesthesia in allergic cases.

The essayist mentions that helium is of no benefit in cases except those refractory to epinephrine. I do not understand whether he meant it was of no benefit or was not necessary. However, I would add that it is a great help, especially for the allergic patient during anesthesia or in angina cases or where epinephrine is contraindicated.

The writer also says that he fails to obtain much benefit the first time or two that helium is given the patient. In my own experience we get immediate results in allergic, obstructive or other pulmonic conditions.

I prefer giving helium and oxygen with the postnasal catheter in treatment of status asthmaticus rather than with the rebreathing bag, and I give it continuously for several hours so as to give the patient more and better rest. For instance, if I may cite one of my own cases in detail from the paper I read on helium at Galveston, Texas, last May:

A white man, aged 36 years, in bed in a state of status asthmaticus, with failing heart and very distressed labor breathing, cyanotic and almost exhausted; had been taking epinephrine in heroic doses, a bottle every 30 hours with little benefit. He had been given ether and oil by rectum by an able allergist, which failed to break the spell. I inserted a postnasal catheter and began giving a mixture of helium 79 per cent, oxygen 21 per cent, and in three minutes his respiration began to be easier, and in five minutes it was normal. We continued this mixture and the patient dropped off to restful sleep for six hours, at which time the oxygen-helium cylinder was empty. Two hours later he began to choke again, but responded to six minims of epinephrine.

Dr. Wearner (*closing*).—We consider this paper a preliminary report on work being done. A detailed statistical report will be justified after several hundred cases have been recorded. We do not wish to make conclusions prematurely, but we report results which so far seem quite constant and which may be of interest to others to verify or disprove.

We are of the opinion that helium-oxygen mixtures restore effectiveness to epinephrine in asthmatics by combating tissue anoxemia. The refractoriness to this drug seems to be directly proportional to the amount of anoxemia present.

Helium administration is of no danger to the patient provided sufficient oxygen is also supplied. This is important to remember when the mixture of helium and oxygen is made in the machine at the time of administration, the helium tank containing practically pure helium. A tank containing a definite mixture of helium and oxygen is safer to use, but limits the administrator in varying the percentages to suit different cases.

We consider the medical anesthetist best qualified to administer helium, as he is acquainted with the closed circuit system and the principles involved.

It is of interest to note that the cost of helium is now no greater than that of oxygen. This is due to improved methods of extraction brought about at the Government helium plant at Amarilla, Texas, under the able direction of C. W. Seibel.

TREATMENT OF PELLAGRA WITH SPECIAL REFERENCE TO THE USE OF NICOTINIC ACID*

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and
DAVID T. SMITH, M.D.†
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Within the past few years, rapid advances have been made in our knowledge of the vitamin B complex. The relationship of the various factors in this group to pellagra has been admirably discussed by Sebrell[22] in a recent review and need not be repeated here. At the present time, the role of nicotinic acid in the treatment of pellagra in man and of blacktongue in dogs is under intensive investigation by various observers. The purpose of this report is to present the results of one year's experience at Duke Hospital with nicotinic acid in the treatment of pellagra.

HISTORICAL

The use of nicotinic acid in the treatment of deficiency diseases was introduced by Elvehjem and his associates,[6] who, in September, 1937, showed that it was highly effective in the treatment of experimental blacktongue. This work was promptly confirmed by other observers.[4 31 26 5 7 23 15 16 33] The beneficial effects of nicotinic acid in the treatment of human pellagra were demonstrated independently and simultaneously by four different groups of workers. The first published report showing the potency of this material was by Fouts and his associates[8] in November, 1937. On December 18, 1937, there appeared two communications, one by Harris[10] and the other by Smith, Ruf-

*Read in Section on Gastroenterology, Southern Medical Association, Thirty-Second Annual Meeting, Oklahoma City, Oklahoma, November 15-18, 1938.

*From the Department of Medicine, Duke University School of Medicine, Durham, North Carolina.

*We wish to thank Mrs. Elsie W. Martin, Professor of Dietetics, for supervising the preparation of the diets used in this study.

*A part of the cost of hospitalizing the patients used in this study was borne by a grant from Lederle Laboratories, Pearl River, New York. We wish to thank S. M. A. Corporation, of Cleveland, and Eli Lilly Company, of Indianapolis, for supplying us with nicotinic acid; Ciba Pharmaceutical Products, of Summit, for supplying us with coramine; Merck & Company, of Rahway, for supplying us with riboflavin; and Valentine Meat Juice Company, of Richmond, for furnishing us with Valentine's liver extract.

†Associate Professor of Medicine, Duke University School of Medicine.

fin, and Smith,[25] reporting the effectiveness of nicotinic acid in pellagra. Spies, Cooper, and Blankenhorn[30] reported a series of 17 cases in February, 1938. Since then there have been numerous reports of the successful use of nicotinic acid in the treatment of pellagra.[12 9 2 27 28 29 18 14 17 32]

MATERIAL

During the past year 85 patients with pellagra have been studied at Duke Hospital. All patients in this group had the characteristic dermatitis and one or more constitutional symptoms. However, 40 of these were considered to be either mild or subsiding cases, and are not included in this report.

The remaining 45 patients were hospitalized (*Table 1*). Eighteen of these patients had complicating diseases rendering them unsuitable for experimental study, and therefore were fed an amplified diet. Seven were given nicotinic acid, 30 to 80 mg. daily, and recovered. Eleven were treated with various extracts of liver. One patient in this group was moribund and died 12 hours after admission. Another died of generalized peritonitis. The other 9 patients recovered.

Table 1

PATIENTS STUDIED IN HOSPITAL

October, 1937, to October, 1938

Diet	Supplement	Recovered	Died
Basic diet	None	10	0
Basic diet	Nicotinic acid	14	1
Basic diet	"Coramine"	2	0
Amplified diet	Nicotinic acid	7	0
Amplified diet	Liver extracts	9	2*

*One died 12 hours after admission; the other of a general peritonitis.

The remaining 27 patients were fed a basic diet, deficient in the B complex (*Table 2*). The necessity of demonstrating that the patient had active pellagra before attempting the evaluation of any curative material has been emphasized in previous publications.[19 20 24] In this group, 10 patients improved on the basic diet or failed to relapse after exposure to sunshine. They were then fed an amplified diet supplemented by nicotinic acid, and all made a satisfactory recovery. The remaining 17 patients were considered as active pellagrins and suitable cases for study. It should be emphasized that of 85 patients suffering from clinical pellagra, only 17 were found suitable for the critical evaluation of the therapeutic value of nicotinic acid.

METHOD OF STUDY

Patients with active progressive pellagra selected for this study were fed the basic diet and treated with nicotinic acid. The dose employed was based upon the experiments of Margolis, Margolis, and Smith,[15] who showed that

Table 2

STANDARD BASIC DIET NO. 3

Article	Quantity (g.)	Protein (g.)	Fat (g.)	Carbohydrate (g.)	Minerals (grams)			Vitamins					Calories
					Ca	P	Fe	A	B	C	D	G	
Corn meal	92	8.3	2.0	69.0	0.011	0.1225	0.0006	——	+	——	——	±	
Cane syrup	105			89.2				——	+	——	——	+	
Flour	111	12.5	1.2	83.4	0.022	0.1030	0.0010	——	+	——	——	—	
Lard	81		81.0					——	—	——	——	—	
Rice	25	2.0	0.1	19.6	0.0023	0.0240	0.0002	——	—	——	——	—	
Field peas	90	19.2	1.4	54.6	0.0756	0.0760	0.0052	+	++	——	——	+	
Hominy grits	51	4.3	0.3	0.3	0.0056	0.0734	0.0005	——	+	——	——	—	
Fat salt pork	60	1.1	51.3	51.3	0.0011	0.0115	0.0001	——	—	——	——	—	2390.0
Cheese	60	17.4	21.6		0.5586	0.4098	0.0007	++	++	——	——	+	264.0
Total		64.8	158.9	356.40	0.6762	0.8202	0.0083						3154.0

0.5 mg. of nicotinic acid per kilogram of body weight each day for 10 days resulted in the prompt recovery of dogs suffering from experimental blacktongue and a rapid restoration of their weight to normal. Increasing the dose by 20 times (10 mg. per kilogram) gave no better results. Fourteen pellagrins were treated with three times the dog-curative dose, or 1.5 mg. of nicotinic acid per kilogram per day. This was given either intramuscularly, intravenously, or orally. The oral medication was by tablet, capsule, or in solution. The parenteral solution was prepared by dissolving nicotinic acid in normal saline so that 1 c. c. contained 5 mg. This was sterilized by boiling or autoclaving, since it has been shown that nicotinic acid is heat stable.[26] For intramuscular use the solution was injected undiluted and produced only slight discomfort. There was no local reaction. When used intravenously, the solution was added to 500 c. c. of 5 per cent glucose in normal saline and administered slowly.

In an effort to determine the effect of large doses of nicotinic acid in normal individuals, 13 medical students who volunteered were selected for experimental study. Ten were given 1 gram of nicotinic acid per day in capsules divided into 4 doses, and 3 were given lactose in similar capsules, so that the student was unaware of what he was receiving. The 3 controls experienced no reactions whatever. Each of the students taking nicotinic acid complained of flushing of the face and neck. However, much more serious symptoms were noted: marked mental depression, epigastric distress, substernal oppression, headache, nausea and vomiting (*Table 3*). Although the experiment was planned for 10 days, 5 of the students felt so badly that they stopped taking the capsules after the second day.

Table 3

SYMPTOMATOLOGY OF 10 MEDICAL STUDENTS AFTER INGESTION OF 1 GRAM OF NICOTINIC ACID DAILY (250 mg. 4 times a day)

Flushing of face and neck	10
Lassitude and mental depression	5
Burning in epigastrium	4
Palpitation	3
Cyanosis of nails	2
Substernal oppression	2
Headache	2
Nausea	2
Dyspnea	1
Vomiting	1

Five of the ten students felt so badly that they discontinued the experiment after the second day.

RESULTS

The oral administration of nicotinic acid in 100 mg. doses produced no unfavorable reactions. The one patient who received 250 mg. four times a day complained of marked flushing shortly after the ingestion of the drug, which persisted for 15 to 20 minutes. The parenteral administration in doses of 1.5 mg. per kilogram invariably produced a flushing of the face and neck, and in many cases of the entire body. This same reaction was observed after the intravenous administration of only 10 to 15 mg. There was no appreciable fall in blood pressure.

The results obtained in the 17 actively progressive cases of pellagra are summarized in *Table 4*. In all but one there was a prompt and dramatic recovery, and no relapse was noted after exposure to sunshine.

The patient who died was a chronic alcoholic with Korsakoff's syndrome. He was given intravenous glucose and thiamin chloride for 4 days without improvement, and then nicotinic acid, 100 mg. intravenously per day. He died suddenly on the sixth day after admission. No autopsy was obtained.

One patient was given a large dose of nicotinic acid, 1 gram daily. His course was essentially the same as that of those receiving the smaller dosage. Two patients were given "coramine" (3 c. c. daily) with prompt recovery.[33 29 32]

In *Table 5* the effects of nicotinic acid, "coramine," and extracts of whole liver on the symptoms of pellagra are shown. It will be observed that the effect of "coramine" is about the same as that of nicotinic acid, and that the average number of days before the subsidence of the glossitis and anorexia is the same for liver extracts and nicotinic acid. However, the dementia and diarrhea failed to clear up in some cases after treatment with liver extracts. It was also observed that the dermatitis and sebaceous gland changes tended to persist longer after treatment with nicotinic acid than with liver extracts.

Case reports 1, 2 and 3 illustrate the effect of nicotinic acid in patients with severe pellagra. It is of interest to note that in two patients a marked peripheral neuritis developed after the symptoms of pellagra had subsided.

Case 1.—J. M. (history 98075), a white man, aged 54, entered the hospital March 1, 1938, giving a history of an erythematous rash over the dorsum of the hands,

Table 4

BASIC DIET PLUS NICOTINIC ACID (17 Patients)

History No.	Age	Race	Sex	Dermatitis		Glossitis		Anorexia		Dementia		Diarrhea		Mg. N.A. per day	Comment
				Before	After	Before	After	Before	After	Before	After	Before	After		
81690	20	W	F	++	0	++	0	+	0	0	0	0	0	100	Prompt recovery
A-1970	8	W	M	++	0	+	0	+++	0	+	0	+	+	30	Recovery
A-2725	40	W	F	++	0	+	0	+	0	0	0	0	0	100	Recovery
56821	42	W	M	++	0	++	0	+	0	0	0	0	0	90	Recovery
A-1814	24	C	M	+++	0	+++	0	+++	0	+++	0	++	0	100	Very ill; recovery
A-4749	64	W	M	+++	0	+	0	++	0	0	0	0	0	100	Recovery
A-4629	63	W	F	++	0	+++	0	+++	0	0	0	+	0	60	Recovery
98075	54	W	M	+++	0	+++	0	+++	0	0	0	+++	0	90	Very ill; recovery
A-4755	42	W	F	+++	0	+++	0	+++	0	0	0	+	0	90	Recovery; myxodema also
99183	65	W	M	+++	0	+++	0	+++	0	+++	0	+++	0	90	Very ill; recovery
82333	52	W	F	+	0	++	0	++	0	+	0	0	0	60	Recovery
92749*	42	W	M	+++	0	+	0	+++	0	+++	0	0	0	60	Recovery
A-9275	40	W	M	+	0	+	0	+++	0	+++	0	0	0	82	Recovery
68486	52	W	M	+++	0	++	0	+++	0	0	0	0	0	1000	Recovery
A-2834	36	W	M	+	+	+	+	+++	+++	+++	+++	++	+++	100	Died†
A-3111	25	W	F	++	0	++	0	0	0	0	0	0	0	‡3 c. c.	Recovery
A-3268	30	C	F	++	0	+++	0	+++	0	0	0	0	0	‡3 c. c.	Abscess of buttocks; recovery

*Previously reported (ref. 25)

†Alcoholic with Korsakoff's syndrome. No improvement after 4 days' treatment with thiamin chloride (100 mg./day). Received nicotinic acid for only 2 days before death.

‡"Coramine"

Table 5

EFFECTS OF NICOTINIC ACID, "CORAMINE," AND LIVER EXTRACTS UPON SYMPTOMS OF PELLAGRA

	Total Cases	Dermatitis		Seb. Glands		Perineal Lesions		Anorexia		Glossitis		Dementia		Diarrhea	
		Cases	Days*	Cases	Days	Cases	Days	Cases	Days	Cases	Days	Cases	Days	Cases	Days
Nicotinic acid	15	13	11	7	12	1	5	13	4	12	3	4	10	4	8
"Coramine"	2	2	10	1	10	1	13	1	3	2	3				
Aqueous Ext. of whole liver	31	24	7	3	7	9	9	25	5	27	4	10†	10	18	7‡

*Average number days before subsidence of symptoms.

†Three still demented at time of discharge.

‡One had diarrhea at time of discharge.

following exposure to a baking oven. He also complained of diarrhea, sore mouth and tongue, nausea and vomiting, and marked anorexia. His diet had been grossly inadequate, and he had also been drinking a moderate amount of whiskey (2 to 4 oz. daily) for years.

Examination revealed a typical pellagrous rash over the dorsum of the hands (*Fig. 1*). The tongue was red and swollen, with ulcerated areas about the margins. There was a marked inflammation of the glans penis, with excoriation about the anus. He was entirely clear mentally.

He was fed the basic diet and given glucose (500 c. c. of 5 per cent solution) twice daily for 8 days, during which time he failed to improve. On the ninth day, and daily thereafter for 9 days, he was given 90 mg. of nicotinic acid intravenously. There was a striking improvement in the tongue within 24 hours, and it appeared entirely normal after 3 days. The diarrhea had ceased after 4 or 5 days, and the skin lesions gradually subsided. The anorexia persisted for 8 to 10 days. Ten days after admission, he developed a peripheral neuritis in both legs, which rapidly increased in severity. One week later he was given 50 mg. of thiamin chloride intravenously daily, for 5 doses, following which the pain in the legs promptly subsided. Two weeks after beginning his treatment he had recovered completely and exposure to a heat lamp failed to produce a relapse (*Fig. 2*). He was instructed to take nicotinic acid, 5 mg. t.i.d., and thiamin chloride, 10 mg. t.i.d. Six months after discharge he was still entirely well.

Case 2.—J. B. A (history 99183), white, male, aged 65, entered the hospital March 24, 1938, giving a history of diarrhea, sore mouth and tongue, and rash on the hands. There was no history of the use of alcohol.

On examination he was critically ill and definitely psychotic. There was a marked rash over the hands (*Fig. 3*), elbows and knees, and sebaceous gland changes over the nose and forehead. The tongue was fiery red with ulcerations beneath the margins, and there was some excoriation about the perineum. Because of his critical condition, treatment was started promtply. He was given intravenous glucose, saline infusions, and nicotinic acid (90 mg.) daily for ten days. Within 24 hours the tongue showed marked improvement and it was entirely normal at the end of three days. There was a striking improvement in his mental condition, the patient becoming entirely clear after 4 or 5 days. On the sixth day his appetite returned and the stools became normal. The lesions of the hands and face gradually subsided, but did not entirely disappear until the end of the third week (*Fig. 4*). During the course of treatment he developed a severe peripheral neuritis, which subsided after 3 doses of thiamin chloride (50 mg. each). He was discharged as recovered May 5, 1938. Five months later he had no symptoms of pellagra, but still showed evidence of peripheral neuritis.

Case 3.—W. W. (history A 1814), a colored man, aged 24, entered the hospital June 7, 1938. About 2 months before admission he had developed a dermatitis over the dorsum of both hands which was followed by a sore tongue and a moderate diarrhea. He gave a history of alcoholism.

Examination revealed a confused and disoriented col-

Fig. 1
The appearance of the patient's hands in Case 1 on admission.

Fig. 2
The hands of the same patient after three weeks of treatment with nicotinic acid.

ored man. There were sebaceous gland changes over the nose and forehead and a rash over both hands. The tongue was beefy red. There was some redness and excoriation of the foreskin of the penis. Nothing else was noted except signs of peripheral neuritis. A diagnosis of alcoholic pellagra with psychosis and peripheral neuritis was made.

He was fed the basic diet and observed for 3 days, during which time there was no change in his condition. One hundred mg. of thiamin chloride were then given intravenously daily for 3 days without apparent improvement. On the sixth day after admission, he was given nicotinic acid, 100 mg. intravenously for 2 days, and at the same time riboflavin, 25 mg. intramuscularly, for 3 days. He made dramatic improvement under this treatment. The tongue became normal; his appetite returned, and there was striking improvement in his mental condition. He was then given 100 mg. of nicotinic acid by mouth in capsules for 4 days, following which the tongue became sore again, and the anorexia and mental confusion returned. The nicotinic acid in the same dosage was then given intravenously, following which prompt recovery took place. He was discharged as well June 28, 1938. When seen 4 months later he was still entirely well.

Fig. 3
The appearance of the patient's hands in Case 2 on admission.

Fig. 4
The hands of the same patient four weeks after treatment with nicotinic acid.

DISCUSSION

The dose of nicotinic acid used in the treatment of pellagra by different investigators[8 9 17 28 29 32] has varied from 50 to 1,500 mg. daily. In the present study the dose chosen was three times the dog-curative course, or 1.5 mg. per kilogram daily.[15] With one exception, uniformly beneficial results were obtained when the material was given parenterally or in solution by mouth. It was observed that when given in tablets or in capsules, much less satisfactory results were noted. This was thought to be due to the relative insolubility of the drug and variability in absorption. This may explain the failure of other investigators to arrive at a minimal curative dose.

Large doses of nicotinic acid should be used with caution. Chen and his associates[3] found that 2 grams daily given to two dogs over a period of 13 to 20 days resulted in the death of both dogs. The administration of 250 mg. four times a day to 10 normal students resulted in very disagreeable symptoms (*Table 3*). These observations have been confirmed by Sydenstricker and his associates,[32] who used doses varying from 250 to 1,000 mg. per day. When nicotinic acid is administered in capsules or tablets, the dose should be 100 mg. two or three times each day.[1]

The first reports on the use of nicotinic acid in dogs with black-tongue[6 4 5 23 26] and in patients with pellagra[2 8 9 10 12 30] suggested that complete recovery occurred under

treatment with nicotinic acid alone. More extensive experiments with animals[13 16 23] and further observations in man[21 27] have indicated, however, that other deficiencies may coexist, which, if uncorrected, will interfere seriously with the curative effects of nicotinic acid. Such multiple deficiencies were strongly suggested by our former studies[11 19 20] upon the relative curative values of extracts of purified and of whole liver.

The evidence seems clear, however, that the cardinal symptoms of active pellagra, namely, the glossitis, anorexia, diarrhea and dementia, subside promptly, and in many cases dramatically, after the administration of nicotinic acid alone. The dermatitis is essential for diagnosis, but its subsidence cannot be used as a criterion in the evaluation of the potency of any curative material.[20 24]

The effect of nicotinic acid on the psychosis of pellagra is especially striking. This was first described in a case reported in December, 1937.[25] Subsequent reports[2 9 12 17 18 28 32] have confirmed this observation.

Alcoholic pellagrins usually, and endemic pellagrins occasionally, have a coexisting B_1 deficiency resulting in peripheral neuritis. These patients should receive thiamin chloride intravenously (50 to 100 mg. per day), since the neuritis is not affected by nicotinic acid.[27] In two patients in this group, and in patients reported by other observers,[27] the neuritis developed while the patients were receiving adequate doses of nicotinic acid. The development of peripheral neuritis was not observed in a single one of the 31 patients treated by aqueous extracts of whole liver.

Although the studies reported here were made with the patients subsisting on a deficient diet for purposes of evaluating the minimal curative dose of nicotinic acid under standard conditions, it is obvious that in the routine treatment of pellagra nicotinic acid therapy should be supplemented by an adequate diet containing an abundance of all the vitamins and essential minerals.

CONCLUSIONS

(1) Nicotinic acid in doses of 1.5 mg. per kilogram (about 100 mg.) per day, given parenterally, is highly effective in the treatment of pellagra.

(2) The oral dose should be larger (100 mg. 2-3 times daily).

(3) Doses of 1 gram per day produce definite toxic symptoms in normal individuals.

(4) Associated deficiencies, particularly B_1, are not affected by nicotinic acid.

(5) Intravenous glucose and normal saline are extremely important in the treatment of critically ill patients.

(6) In the routine treatment of pellagra, nicotinic acid should be supplemented by a well balanced diet.

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DISCUSSION (*Abstract*)

Dr. William Bennett Bean, Cincinnati, Ohio.—First of all, I should like to say that it was a great pleasure to hear Dr. Ruffin's paper and see the moving pictures which portrayed so dramatically the changes we see in pellagrins following the administration of nicotinic acid. This report is in essential agreement with those which have come from our clinics in Cincinnati and Birmingham. It is interesting that the Duke investigators have been interested in minimum dosage, whereas we have found that the most rapid relief of symptoms comes when large doses are given. Our investigations of the physiologic and pharmacologic reactions to nicotinic acid indicate, as does this report, that oral use of capsules or tablets does not make for maximal absorption of the drug. Since, however, this method is the simplest, we feel that large doses are not only safe, but are of importance, especially in acutely ill patients. We have noted that the tolerance of pellagrins for nicotinic acid is high.

The rather alarming reactions which Dr. Ruffin reported in his volunteers taking 250 mg. four times a day indicate that the substance should not be given indiscriminately. We have given a single oral dose of 1.5 grams; we have given 1.7 grams daily for 10 days; and we have given 1 gram daily for six weeks to normal adults without any evidence of depression, cyanosis or marked gastro-intestinal disturbance, and no other event besides the flushing, rise in skin temperature, and occasional epigastric distress which we have shown to be associated with increased peristalsis. It is possible that some of the symptoms in Dr. Ruffin's cases were manifestations of medullary stimulation such as are produced by the closely related "coramine." Even so, we never recommend large single doses, but rather repeated small ones.

Finally, I do not believe it is proven that canine blacktongue is identical to human pellagra for several reasons: firstly, no porphyrin or related substances are found in the urine; secondly, there is no evidence of severe mental disturbances; and, finally, dogs have not the flushing reaction observed in human beings when given nicotinic acid. Therefore, the toxicity of nicotinic acid for dogs and human beings may not be parallel.

THE RELATIVE INCIDENCE OF HYPERPLASIA OF THE PROSTATE IN THE WHITE AND COLORED RACES IN LOUISIANA*

AN ANALYSIS OF 325 GLANDS REMOVED AT OPERATION

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Studies of the incidence of disease in different races have furnished many valuable contributions to the science of racial immunity and susceptibility. They have also altered many preconceived ideas. The collection of more complete information on certain diseases which at first were thought to be unusual in certain races, has often disclosed a relatively equal racial distribution. Buerger's disease, for example, was formerly thought to be rare except in the Jewish race, but more complete studies have shown its widespread distribution among all nationalities.[1] Bram, in 1920, after questioning many noted clinicians, was able to locate only one case of toxic thyroid disease in the negro, but Maes and Boyce, in 1936, reported 123 such cases from the New Orleans Charity Hospital.[2] Involvement of the central nervous system by syphilis, once thought unusual in that race, has been shown to be a not uncommon affliction among negroes.[3] Recent studies on hyperplasia of the prostate have, in a similar way, cast considerable doubt upon many early statements that this disease is rare in the colored race.

Rodman[4] observed in 1919 that simple hypertrophy of the prostate is rarely seen in the negro, and in this opinion he was supported by many other surgeons whose experience included treatment of both the white and colored races. Day,[5] in a survey of the clinical incidence of urological and venereal diseases at Louisville City Hospital from 1916 to 1920, found only 8 cases of hyperplasia of the prostate in the negro as compared to 30 in the white. He makes no statement, however, as to the proportion of white and colored patients admitted during this period. Walker,[6] in 1922, studied the incidence in many

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patients throughout the world and concluded that "enlargement of the prostate is a condition having a definite distribution that is anthropological rather than geographical in character." He believed it to be extremely rare among Mongols and Negroes. Hirsch's[7] clinical experience led him to say, in 1932, that hyperplasia of the prostate was not common in negroes, and as late as 1936, Keyes[8] made the statement that "the white race is said to be much more afflicted with prostatic hypertrophy than the black."

Other studies, however, suggest that hyperplasia of the prostate may be far from rare in the colored race. Matas,[9] in 1896, in his comprehensive treatise on the surgical peculiarities of the negro, pointed out that although his statistics were meager, in his opinion "senile enlargement of the prostate was more frequent and more fatal in the colored race." Randall,[10] in a survey of 1,147 postmortem records in Philadelphia, found 41 instances (13 per cent) of hyperplasia of the prostate in 314 negro subjects, whereas in 833 autopsies on white patients there were 179 instances (20.2 per cent) of this disease. Thirty-four per cent of the total number of negroes and 62.8 per cent of the total number of white subjects were over 50 years of age. These figures, Randall concludes, completely refute the belief "that the negro is to a degree racially immune to prostatic hypertrophy, and even the discrepancy here noted is more than explained by the early age of death of the negroes in this series."

Smith and Jaffe[11] studied the size and weight of prostate glands obtained from 1,093 necropsied bodies at the Cook County Hospital and found that hypertrophy occurred with relatively the same frequency in both the white and the colored races. The results of the histologic examination of the tissues were not recorded. In 1933, Kahle and Beacham[12] reviewed the material at the New Orleans Charity Hospital and found that hypertrophy of the prostate gland occurred with relatively the same frequency in both races. In 1937, Derbes, Leche, and Hooker,[13] in a study based on clinical diagnosis, concluded that benign hypertrophy of the prostate gland was at least as common in the negro as in the white race, and might even be more common in the negro.

Some of these studies would seem to indicate that the incidence of prostatic hyperplasia is approximately equal in the white and colored races. These conclusions are open to question, however, either because the data were obtained from cases diagnosed only by clinical observations or because the observations were not confirmed by histologic study.

In view of these facts, we thought it would be instructive to study the relative racial incidence of prostatic hyperplasia in a group of cases in which hyperplasia could be proven by histologic study, and in which the symptoms of urinary obstruction were sufficiently severe to necessitate surgical relief. The material for such a survey was found in the surgical pathology records of the Charity Hospital of Louisiana at New Orleans.

MATERIALS AND METHODS

Records of 475 prostate glands removed at operation were found in the surgical pathology files from January 1, 1933, to June 30, 1938. Microscopic preparations from each of these glands were examined, and only those cases were selected for this study which showed definite histologic evidence of glandular hyperplasia, irrespective of associated lesions.

We considered the following criteria evidence of hyperplasia: diffuse or nodular collections of newly formed glands lined by single or multiple layers of columnar epithelium and showing exaggerated papillary infoldings which resembled the normal epithelial folds. Cystic dilatations, with loss of villae and flattening of the epithelium, were common accompaniments of this picture. The use of weights and measurements as criteria of hyperplasia was not feasible, since in some cases the glands were removed by transurethral resection.

Using these standards, we found definite prostatic hyperplasia in 325 of the 475 cases examined. A small percentage of the 150 discarded cases showed carcinoma not associated with hyperplasia; the others showed only granulation tissue, inflamed prostatic tissue, or other unrelated lesions. In this manner many cases of obstruction of the prostatic urethra and contracture of the vesical neck, resulting solely from chronic inflammatory processes, were eliminated from this survey. Such inflammatory processes, because of the high incidence of venereal disease, are unquestionably more frequent in the colored than in the white race.

The microscopic study was made without reference to clinical data. The case records were then arranged and analyzed according to age and color.

ANALYSIS OF DATA

Of the 325 cases of prostatic hyperplasia, 145 (44.61 per cent) occurred in white patients and 180 (55.39 per cent) occurred in negroes (*Chart 1*). From January 1, 1933, to June 30, 1937, 58,093 white adults (60.6 per cent) and 37,717 (39.4 per cent) colored adults were admitted to Charity Hospital (*Chart 1*); in the hospital records of general admissions, all patients above 10 years of age are designated adults. According to the actual number of white and colored patients admitted, we should expect, on the basis of random distribution, to find 197 white and 128 colored patients with prostatic hyperplasia. The deviation from these values of the actual number of cases, 145 white and 180 colored, greatly exceeds the standard error (P=0.0001), and indicates that there is in the sample at hand a mathematically significant preponderance of negroes with hyperplasia of the prostate.

There may be some question as to whether the sample we have selected reflects the true incidence of this condition in the general population. There may also be some question as to whether the general admissions to the hospital may properly be used as a control group for hyperplasia of the prostate. Since this disease is limited to males, most of whom are over 50 years of age, it might be more accurate to compare the number of cases of prostatic hyperplasia with the total number of adult males admitted to the genito-urinary surgical services.

The total adult (above 21 years of age) male admissions to these services from January 1, 1933, to June 30, 1938, were 8,192, of which 4,116 were white and 4,076 were colored (*Chart 1*). Using these figures as a basis for calculation, we would expect, according to random distribution, 163 white and 162 colored cases of prostatic hyperplasia. The deviation of the actual numbers, 145 white and 180 colored patients, from these expected values, exceeds the standard error and is probably significant (P=0.03). The admissions to the genito-urinary surgical services may also be a somewhat inaccurate control, inasmuch as the greater incidence of venereal diseases among the colored race increases disproportionately the number of negroes admitted to the genito-urinary wards. Since by comparison, both with general admissions and with admissions to the genito-urinary services, prostatic hyperplasia occurs with greater frequency in the colored than in the white race, it might seem possible to conclude that the disease is more common in the negro. This conclusion is perhaps open to question when the disease is analyzed according to the incidence in the two races in each separate year of the study.

Chart 2 shows that in each of the first three years under consideration, the number of white slightly exceeded the number of colored cases. At the end of this period there was a sharp and sustained rise in the negro incidence. The white incidence, however, continued at about the former level. It is this rise which accounts for the elevation of the total number of cases in negroes above the total number in white patients.

Up to the present time no explanation for this

CHART 1

THE NUMBER OF CASES OF HYPERPLASIA OF THE PROSTATE COMPARED TO THE GENERAL ADMISSIONS AND TO THE ADMISSIONS TO THE GENITO-URINARY SURGICAL SERVICES ~ ANALYZED AS TO RACE ~

	GENERAL ADMISSION JAN. 1, 1933 to JUNE 30, 1937		ADMISSIONS TO G-U SURGICAL SERVICES JAN. 1, 1933 to JUNE 30, 1938		CASES OF HYPERPLASIA OF THE PROSTATE PROVEN BY HISTOPATHOLOGY	
	NO. OF CASES	PERCENTAGE	NO. OF CASES	PERCENTAGE	NO. OF CASES	PERCENTAGE
WHITE	58,093	60.6	4116	50.24	145	44.61
COLORED	37,717	39.4	4076	49.76	180	55.39
TOTALS	95,810	100.0	8192	100.00	325	100.00

rise has been found. An analysis of changes in the operation of the New Orleans Charity Hospital has revealed no factors which might suddenly have altered the previously established incidence of prostatic hyperplasia in white and colored patients. An analysis of recent changes in local and state social conditions likewise reveals no possible explanation. The rise in incidence has occurred among colored patients coming from distant parts of Louisiana, as well as among those living in the vicinity of New Orleans. Since no satisfactory interpretation of this rise is available, we cannot be certain whether it is the early or the late years of this survey which reflect the true incidence of hyperplasia of the prostate among negroes. It can fairly be concluded, however, that the disease occurs with equal frequency in white and colored males, and that it may even be more frequent among negroes.

The age relationships in white and negro patients with hyperplasia of the prostate were analyzed from three standpoints: the average age of the group as a whole; the average age according to each year covered by the study; and the average age by decades. Every method of analysis suggested that the disease occurs in negro subjects at a somewhat earlier age than it occurs in white subjects.

Hyperplasia of the prostate occurred in the whole group at the mean age of 66.52 ± 0.434 years in the white and 62.86 ± 0.444 years in the colored race (*Chart 3*). The difference between the mean ages is 3.66 ± 0.616 years. Since the actual difference between the means is approximately six times greater than the probable error of the difference of the means, this result may be said to be mathematically significant. It should be noted, however, that there are possible errors inherent in the data from which these means were calculated. Old colored patients are frequently uncertain or ignorant of their ages, and the extent to which this factor influences the reliability of the calculated age difference is unknown. The difference in the mean ages, however, plus the analysis of age incidence as presented in *Charts 3* and *4*, leads us to believe that hyperplasia of the prostate occurs at a slightly earlier age in negroes.

The average age distribution of the cases in the two races is presented for each individual year in *Chart 3*. It should be noted that the ages of the white patients remained relatively constant in each year, fluctuating only 2.9 years

CHART 2

THE RELATIVE ANNUAL INCIDENCE OF HYPERPLASIA OF THE PROSTATE IN THE WHITE AND COLORED RACES ADMITTED TO CHARITY HOSPITAL AT NEW ORLEANS

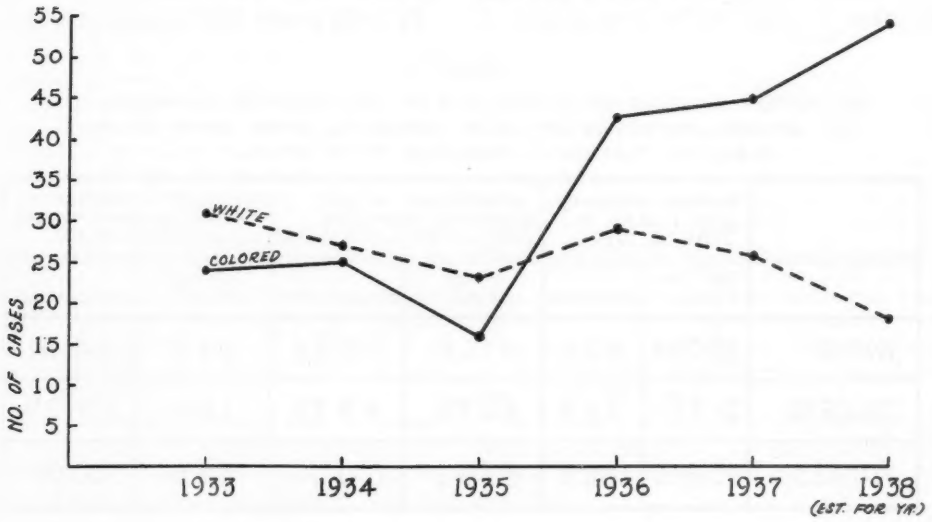


CHART 3

COMPARATIVE AVERAGE AGE AT ADMISSION
OF COLORED AND WHITE RACES
GROUPED ACCORDING TO YEARS ~

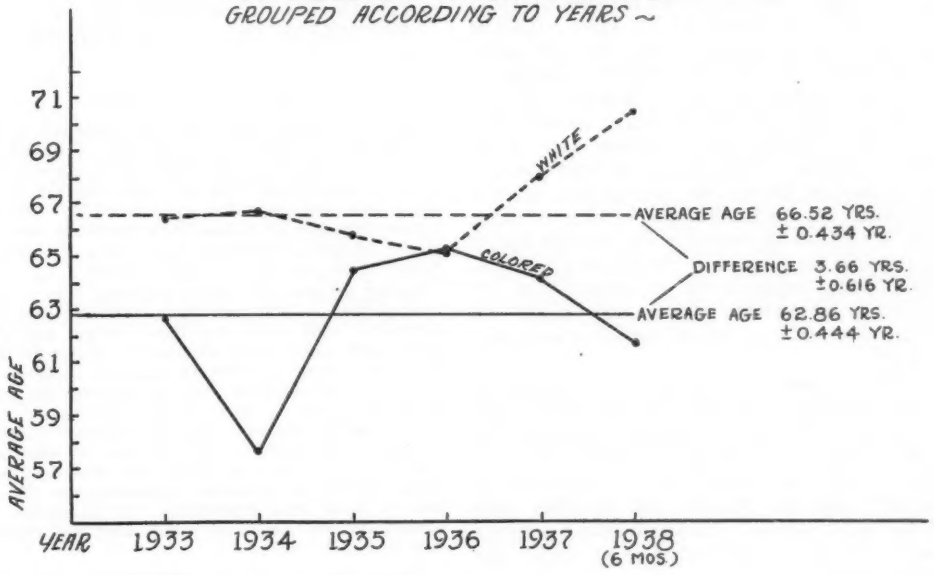
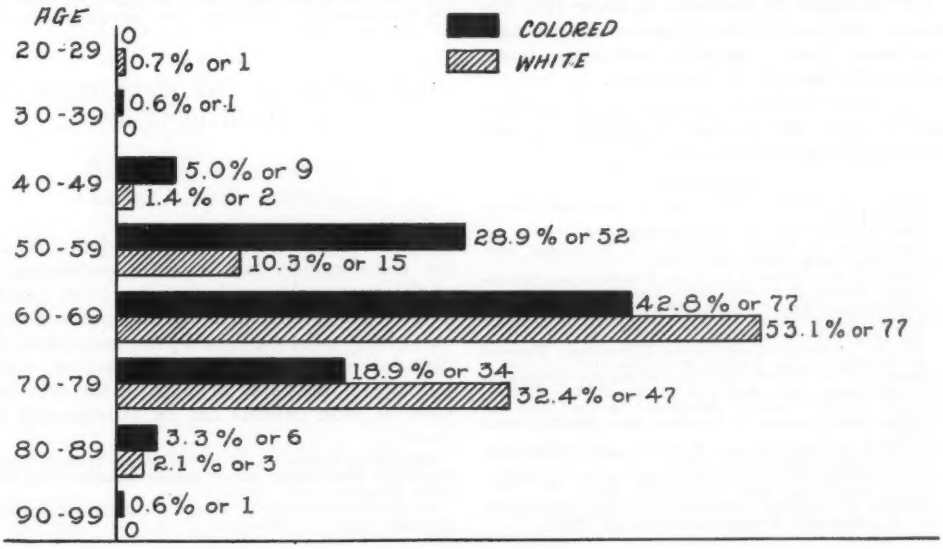


CHART 4

INCIDENCE PER CENT OF HYPERPLASIA OF THE PROSTATE
IN THE WHITE AND COLORED RACES
ARRANGED ACCORDING TO AGES IN DECADES



from 1933 through 1937 (1938 was not included in this calculation because it represents only half a year). During the same period the yearly average ages of negroes varied between 57.6 and 65.1 years, a difference of 7.6 years. This is perhaps another indication that the ages given by the negro patients were somewhat unreliable. With one exception (1936), however, all the yearly average ages of the negro patients fall below the respective yearly average ages of the white patients. Furthermore, in both races a curve showing the various average ages in each individual year deviates almost equally on either side of the line representing the average age of each group for the entire period of 5½ years. This further supports the conclusion that the difference between the average ages in the two groups is actually as well as mathematically significant.

Chart 4 presents the incidence of hyperplasia of the prostate in the white and the negro races according to the age in decades. Whereas the greatest incidence in both races falls in the seventh decade, the colored cases predominate in the fifth and sixth decades, and the white cases in the eighth decade. This distribution suggests again that the disease occurs at an earlier age in the negro.

SUMMARY

(1) Of 475 prostate glands removed at operation in Charity Hospital of Louisiana at New Orleans, 325 showed histologic evidence of hyperplasia.

(2) Evidence is presented to show that the relative incidence of hyperplasia of the prostate is certainly equal in the white and colored races, and possibly greater in the colored.

(3) Three different methods of age analysis seem to show that prostatic hyperplasia occurs at an earlier age in the negro.

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DISCUSSION (*Abstract*)

Dr. W. F. Keller, Oklahoma City, Okla.—It is with considerable hesitation that I attempt to discuss this paper, first, because I have had the impression that prostatic hypertrophy was far more frequent in the white male than the black, and second, the data that I have been able to obtain from records at the University Hospital, Oklahoma City, cover too short a period of time to be of statistical value.

During a three-year period beginning July 1, 1935, through June 30, 1938, four thousand five hundred and thirty-four white males and three hundred and sixty-seven black males were admitted to University Hospital, or a ratio of white to black of 12 to 1. Of this total male admission, only one hundred and forty-eight were prostatic cases. Seventy-eight white males had surgically removed and histologically confirmed prostatic hypertrophy, or 1.72 per cent of white male admissions. In this same series only five negro males were reported for prostatic hypertrophy, or 1.36 per cent of black male admissions. Our percentage difference between white and black cases was therefore only 0.36.

The average age of the seventy-eight white males was sixty-eight years, while the average for the five negro males was sixty-six years.

The results of this small series also suggest that there is no appreciable difference in incidence of prostatic hypertrophy in the two races; neither is there a marked age difference.

Dr. Schenken (closing).—It is gratifying to learn that Dr. Keller's study reveals the same general distribution as our own survey.

THE STUDY OF THE ENDOMETRIUM AS AN INDICATOR*

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With the increase in the knowledge of female sex endocrinology and a better understanding of the menstrual irregularities has come conflict and misunderstanding in the therapy and tedious, costly and complicated paraphernalia in the diagnosis of disorders of menstruation. The purpose of this paper is to recall the fact that most of these patients can be satisfactorily di-

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agnosed and treated by the simple means of adequate history, physical examination, recognition of the usual endocrinopathic stigmata, blood study, basal metabolic rate determination and careful repeated study of the endometrium, and to discuss the facts obtained by studying the endometrium.

If the histologic study is to be prolonged, we advise the use of some type of biopsy forceps. The type used by Burch or the suction curette of Novak or similar instruments all are satisfactory. One should become familiar with the microscopic picture of material obtained by such methods and should realize that the method may fall short in certain instances. One must not confuse traumatic bleeding with bleeding from therapy. To give exact information the biopsy should be taken within the first 12 hours of bleeding. It is of great value in checking the effect of therapy.

The only proven function of the endometrium is its participation in the maternal response in preparation for the fertilization of the ovum and helping in the implantation and nutrition of the ovum until the ovum can develop its own means of obtaining these. In the event of its not being called for this purpose, we find the changes associated with menstruation taking place; provided that the influences are present that lead to menstruation and provided that the receptivity and sensitivity of the endometrium are such that it can appreciate such influences. In analysis, what has been described is menstruation and impregnation, and, as recalled by Novak,[1] the term menstruation is much older than the ideas of hormonology and can be used to describe periodic uterine bleeding in the female. The danger to a proper interpretation comes not from misunderstanding terms such as "true menstruation" and "uterine bleeding," but from too little knowledge or too liberal application of the proven facts associated with the act of menstruation. An excellent starting point is the knowledge that uterine bleeding can be associated with any type of endometrium. An instance of fatal uterine bleeding has been reported from our clinic[2] in a 17-year-old negro girl, who showed an atrophic endometrium at autopsy. Likewise amenorrhea may be associated with any type of endometrium. The lack of menstruation should concern us chiefly in the study of fertility problems or when the symptom has a bearing on associated systems and conditions. The endometrial picture is a composite one. It is the focal point or sum total of the endometriotropic influences. It is impossible to estimate correctly each of the factors, but a careful and repeated study of the endometrium offers a fairly indicative evaluation of the hormonology in the female. Such a study is equally important in ruling out the endocrines as causative factors in such a symptom as irregular bleeding. The simple expedient of endometrial biopsy or curettement has often revealed the presence of infection or new growths and indicated the proper treatment. Failure to use these methods of diagnosis has led to tragedies. Most of us have seen patients with pelvic malignancies and inflammations made hopeless and crippled by the injudicious use of glandular products where adequate study was sacrificed for therapy.

Irregular bleeding, pain, vaginal discharge, and the sensation of a mass, form the usual subjective symptoms in gynecological diagnosis.[3] Pregnancy and its complications are hardly within the scope of this paper, but should be in the mind of anyone studying endometrial material. The decidual reaction in normal and abnormal uterine pregnancy and in ectopic pregnancy may be conclusive. The detection of changes in the chorionic villi may be life saving.

Endometritis as an entity is doubted by some.[4] There is no doubt that many endometriums were formerly diagnosed as having inflammation when the structural change was really a part of the normal menstrual change. Miller defends the term and feels that it is undoubtedly causative in some instances. Bland regrets the fact that recently we have been figuratively weaned away from this descriptive phrase and fears that we may forget that this condition exists as a pathological entity. He feels that pelvic inflammatory disease will explain many of the cases which have not been ascribed to the more frequent instances of pregnancy complications, new growths or endocrine changes. We feel that it is or was present in most instances of inflammatory lesions. The reason it is not found is obvious. It is against the laws of conservatism to curette or operate upon most of these cases.

Fluhmann[5] found that in the patient with menorrhagia or polymenorrhea the endometrium either is normal or shows a type of chronic basal endometritis. The majority of the patients with irregular or continuous bleeding have an intense acute or subacute inflammatory lesion of the endometrium, especially marked near the

surface and associated with vascular changes, necrosis and ulcer formation.

Pratt[6] reemphasizes the necessity of a careful history in the diagnosis of fundal carcinoma. We all know that a reliable menstrual history is the very rare exception. He offers a simple form that seems to embrace the necessary data and if followed closely should give an insight into the possible cause of irregular bleeding. Bleeding is generally recognized as the most common symptom of cancer of the uterus and continuous flow, especially at the menopause, is particularly suggestive. The relationship of fundal carcinoma to hyperplasia of the endometrium varies with different investigators and different criteria for the diagnosis of each condition. Novak[7] studied 12,813 specimens of endometrium and found 104 adenocarcinomas and 804 hyperplasias. In the hyperplasia group were found 14 that showed areas which were suggestive of cancer and in the adenocarcinoma group were found 25 coexistant hyperplasias. Carcinoma is found relatively more frequently in myomatus than in the normal uterus. Growths and malignant polyps may occur in the same uterus.

Fluhmann[8] recalls the occurrence of areas of squamous epithelium in the endometrium, which resembles squamous metaplasia developing in animals after the use of estrogenic substances, They may have a similar origin like the areas of squamous cell metaplasia sometimes seen in endometrial carcinoma.

In spite of the enormous amount of painstaking microscopic study, careful animal experimentation, standardization, scrupulous clinical investigation and concise evaluation by well trained minds, there is still much loose writing, many uncritical therapeutic data, and inexact diagnosis and reasoning concerned with the condition "hyperplasia of the endometrium." Perhaps the vastness of the material surrounding this condition is the cause. To have thoughts on this and other subjects is well and proper, but thoughts, however brilliant, should not get into the medical literature as facts.

Martzloff[9 10] thinks the term "hyperplasia of the endometrium" is loosely used. He re-emphasizes the histologic criteria. He expresses the wish that the diagnosis could be put on a mathematical basis and would expect a variation of at least 150 microns between the maximum and minimum diameter of the glands. Moderate variations in the size of the glands cannot be interpreted as hyperplasia without confusion and the accumulation of many inexact data. There are normal variations in the size, shape and diameters and staining qualities of the normal glands in any one studied field, it matters not in what stage of the cycle. This irregular and uneven response has been clearly described by other observers. Just as you get a "spotty" reaction in endometrium you may get a varied response to a given hormonal stimulus. The question of individual cellular response must be considered.

It has been shown by the studies of Schroder,[11] Cullen,[12] Novak[13] and Burch[14] that in hyperplasia of the endometrium bleeding occurs from an estrogenic type of endometrium. Hyperplasia of the endometrium is probably a dependable piece of evidence of ovarian dysfunction. The exact alteration of ovarian function is disputed. No one has been able to demonstrate excessive accumulation of the estrogens in the body fluids.

Payne[15] analyzed 534 patients with endometrial hyperplasia and found that its relationship with myomata, endometriosis, pelvic inflammation and ovarian cysts was uncertain.

Taylor[16] has described hyperplasia of the endometrium which developed 4-13 years after the menopause. These must be explained, as must its occurrence with fibroids, inflammation and carcinoma of the uterus when the ovary is apparently unaltered. He suggests the following as answers, or causes: late follicular development; small granulosa cell tumor, of an extra ovarian source of estrogenic hormone. We[17] have suggested a difference in the response of the endometrium in the old and young. Here again individual cellular receptivity may be the basis.

Studies by Traut and Kuder[18] deal with progestational types of functional bleeding. They attach pathologic significance to a process of irregular ripening which results perhaps in irregular tissue shedding, associated with prolonged or excessive bleeding from an endometrium exhibiting patchy progestational proliferation. Herrell and Broders[19] believe that the term endometrial hyperplasia is misapplied in many instances of functional meno-metrorrhagia where the endometrium is in the estrogenic phase. In many cases there is little or no evidence of endometrial hypertrophy in the strict sense of the term. Bleeding in many such cases occurs from persistent estrogenic or proliferative stages. Hamblen[20] studied 700 consecutive patients with functional irregularities of the menstrual cycles and correlated clinical data, reviewed and exam-

ined all available endometrial specimens secured by hysterectomy, curettage and biopsy. Ovarian tissue has been studied when available and if the follow-up records were not adequate, questionnaires were employed. The following schema was forthcoming from the study and is used by our clinic in classifying endometrial material.

Hypo-estrogenic Endometrium.—This is called commonly atrophic or senile endometrium.

Normal Estrogenic Endometrium.—This is the normal interval or proliferative endometrium.

Persistent Estrogenic Endometrium.—This may not differ materially from early or late estrogenic ones except that it shows no active proliferation, but instead cytologic and functional evidences of regression.

Hyper-estrogenic Endometrium.—This is the endometrial pattern originally described as "hyperplasia of the endometrium."

Mixed Endometrium.—This endometrium may show basic histologic characteristics of hypo-estrogenic, persistent estrogenic or hyper-estrogenic endometrium in association with a "patchy distribution" of areas of progestational differentiation.

Progestational Endometrium.—This endometrium is the normal premenstrual or progestational one.

Menstrual Endometrium.—This endometrium is the normal endometrium of menstruation.

The hormonal changes influencing the endometrial changes should teach us what to do and, probably more important, what not to do. The "opening up" of knowledge of the sex endocrines has led to a gynecologic furor and therapeutic furosity, most of which is based on incomplete information, uncritical data and the tendency to apply information gained by animal observation to the human.[21] There may be something to the romantic homily that "no two women are alike and no one woman is alike twice."

Most of our efforts and attention have been directed to the pituitary ovarian hook-up and less to the ovary-to-endometrium mechanism.

Many functions have been ascribed to the anterior pituitary and many hormones have been thought to come therefrom. The pituitary is relatively a small organ and contains only several types of cells. It is situated in the middle of the skull where a slight increase in size or deviation from the normal would readily be interpreted in terms of headache, visual disturbances, x-ray findings, physical alterations, blood hormone changes or other recognizable symptoms.

How much simpler the problem would be if it could be shown that the anterior pituitary put out a "universal" or "master" hormone which served all the demands of growth, thyrotropic, gonadotropic lactation and other pituitary functions.[24] There is a distinct probability that investigators have been "chipping off" portions of a hormone and carrying it in the direction of their research and interest. The alteration of the pituitary by other hormones, by depressing its function and probably by dilution is more easily understood. It is our belief that the pituitary factor is a fairly constant one. Not so with the ovary. One who inspects the ovaries at the time of laparotomy is constantly struck with the thought that consistency of ovarian function is remarkable.[22] From a prognostic standpoint, one is more optimistic when one finds some local abnormality as the cause of menstrual irregularities. One would not expect a normal response from an abnormal organ, be the stimulus normal or abnormal. The endometrium is influenced by both the pituitary and the ovary through the ovary, a fact that we remember in treating menstrual irregularities while forgetting the possible effect of other glands. In therapeutic enthusiasm one is apt to direct all the attention toward pituitary and ovary when, as a matter of fact, the findings in most of the patients point toward exocrine factors, changes in the blood or to the thyroid. More than one wise endocrinologist has audibly or otherwise, thanked goodness for the thyroid. Crile repeatedly has described fatigue and death as a cellular response and MacNider reduced bodily defense and repair to the cell. It may be that if one considers cellular response in the endometrium he may find the answer to some of the apparent paradoxes. This cellular activity helps explain the metabolism of progesterone as shown by the most important contribution of Venning and Browne. For the past year, Hamblen[20] has been making pregnanediol studies. When we consider the variables of production, elaboration, utilization and metabolism and excretion, we see possibilities of deviation. We also see the need of a method whereby the levels of progesterone or its products in the blood can be estimated. Variations occur in the excretion of this product in women thought to have normal menstrual cycles and the relationship to the onset of menstruation is irregular. The excretion is not continuous throughout the progestational cycle. A single determination is of little value. Immature or markedly hypoplastic endometrium may not be capable of

metabolizing progesterone and it seems reasonable that progesterone must be altered before it can aid in progestational differentiation. This explains the sensibility of sensitizing atropic endometrium before the use of the active principle of corpus luteum if a progestational reaction is to be obtained. The ability of the endometrium to metabolize intrinsic and injected progesterone may differ.

Even after the progesterone is metabolized there is no assurance that every endometrium will utilize the product for progestational proliferation. The appearence of the pregnanediol complex in the urine may occur without an associated progestational endometrium. Hamblen attributes these apparent paradoxes in part to a lowered sensitivity or refractivity of the endometrium and leads to the conclusion that the excretion of sodium pregnanediol glucuronide may not be evidence that an endometrium is undergoing progestational proliferation, nor a failure of its excretion that ovarian function is inadequate. Thus, bleeding from an estrogenic endometrium may not be "anovulatory" in character. The proof of ovulation is difficult.[22] Biopsy study alone is inadequate. Observation and careful recording over a period of time is necessary, repeated biopsy studies, blood and serum determination, and the use of the electric potential recording as described by Burr, Allen and Musselman and by Rock and his co-workers may allow such a diagnosis. These refinements and additions to our methods of study are worth while and are contributing much to our knowledge of such conditions. The inability to make use of them because of their expense or inaccessibility is no excuse for failure to use the simpler methods which we know are adequate in most instances.

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GENERAL ASPECTS OF AUTOMOBILE INJURIES*

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The subject of my address concerns the dire and far too frequent disastrous results following automobile accidents, but reflects into the field of trauma generally and might even be entitled "The Inadequacy of Traumatic Surgery of Today."

The precept of medicine through time has been the prevention of disease and control of accompanying disabilities, disaster and death.

Through untiring study and research, the cause of many diseases which, during only the last part of the last century and into this, have scourged the world, have been found and such diseases eliminated or brought under control.

The peoples of the world have, by education, become disease conscious to the end that they seek prevention and are interested in cause so that effect may be controlled or limited.

Medical discoveries of today become "news" in the lay press, which proves that an interested audience is at hand. Of course, this is due to the recognition of the earnest, untiring, and unselfish efforts of the medical profession, and justly so, yet it is almost confined to the subject of disease, while that which may be denoted as belonging to surgery is of little practical use for the layman. When the cause or cure of cancer is mentioned, it becomes front page, while following a serious accident, the record shows only how many are dead and how many injured, with no concerted thought of how many did not have to die, of how many remediable injuries were reduced to permanent by improper handling. No comment is made other than to remark the untimely death by

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frightful accident, and one more fatality is chalked up on the highway score; even the coroner records only death due to auto injury. This which seems everyone's business is no one's business, but I say to you, as surgeons, that it is our business. So long as we feel it is not our business because, as individuals, we are not "called in," and only shrug and say "too bad," this fearful condition will continue. The corollary is the same as if we were dealing with smallpox, cholera, typhus, typhoid, bubonic plague, *et cetera ad nauseam.*

I say to you that the fault of this is ours as surgeons; the public is ready and anxious to be directed into proper channels, to be taught proper methods, to learn how impending disaster may be averted, but only through concerted action on our part may this be achieved. The laity know of blood poisoning, of infection and antiseptics, but there their knowledge ceases. Everyone knows of Dr. Alexis Carrel because of publicity oft repeated on the subject of sterilization of wounds, but whether his method or yours accomplishes the same end is of no moment. The portent is that the laity has only a superficial smattering, though the layman is ready to understand, and unfortunately still thinks that "wound rouge as used by surgical flappers is all that is necessary" (Moorehead).

White of Fort Worth says:

"Many of us still pour floods of irritating antiseptics of all colors into raw quivering wounds and derive an unwarranted sense of security and well being from it."

So long as we continue to do this, how can the public become better informed? Their demand seems to be that all cuts should be sewed up promptly, which as we know or should know well, is the straight road to serious infection and blood poison. So I say again that there must be concerted thought and effort on our part first in our manner in dealing with trauma, and in turn teaching the public that which they should know and that which they should do. As I speak of trauma, I do not confine my thoughts to fractures. I mean to include everything from an abrasion to a ruptured spleen, from a simple or compound fracture to a fractured skull or spine; or brain, or cord, or chest, or abdominal injury.

The mortality and morbidity today of such injuries on our highways alone is rapidly encroaching on the total take of cancer and tuberculosis combined. In a recent survey of the various causes of disabilities throughout the country, influenza tops the list at 18.1 per cent, while accidents are second with 15.7 per cent, the morbidity of which we all know to be prolonged through lack of proper care. It seems to me that herein particularly the adage, how good the doctor, how good the result, is applicable. In our County-City hospital at San Antonio, I am informed the mortality last year was 4.2 per cent from all causes, while the mortality from trauma alone was 23.6 per cent. This is a dark spot and a terrible admission, but what are we, as surgeons whose charge it is, going to do about it? In industrial centers, where studied application of surgical principles are had and where employees are taught the principles and practice of first aid, both the mortality and morbidity of such injuries are reduced by more than half that which exist on the highway.

It is true that marvelous strides have been made in the reconstruction of the seriously injured; that much is and can be done in the surgery of prevention and correction of deformities resulting from trauma, but is it not our duty, through direction and guidance of the profession and through it the laity, to lessen the toll of preventable complications?

What the physician should know is that which is required of him when he first sees the case, while the layman should be taught in an understanding way the simple procedures to prevent complications until the doctor arrives, or the patient is safely transported to a hospital. There are three cardinal principles that we all know or should know, which if transmitted to the understanding of the laity would go a long way in solving our problem.

They are the recognition of shock, the control of hemorrhage, the fixation by splint of joints both above and below the fracture, and not to flex the body or neck of the patient who complains of pain in these regions, as there is probably a broken vertebra. And the layman should know what disastrous results may follow if these principles are not followed.

So I say again the fault is ours. Is there not possibly an insufficiency of effort or opportunity for observation on the part of teachers in our schools who prefer to talk about differential diagnoses or surgical pathology, or, in the fracture service, who only demonstrate what has been done? Or does it lie with the medical student, whose chief interest is in the obstruse and who will miss his breakfast only for an unusually large tumor or cesarean section, considering cuts and bruises and simple fractures only trivial

things, not realizing that from such he must make his living until he is qualified for other things.

I ask this as a question, as my first internship was in a hospital confined to trauma, and I remember only too well how completely lost I was. Without the direction and aid of the ambulance driver, I would probably have been fired the first month; and subsequently my experience lies only in the observation of interns who have come from the North, East, South and West, and I am sorry to say that almost without exception I find them woefully lacking in knowledge of what to do about trauma.

I do not mean to imply that only therein lies the fault, but I do believe that more study, direction and interest in trauma at the fountainhead would go a long way toward making the embryo surgeon trauma conscious, thus cultivating ingenuity, watchfulness and more interested care in that which from superficial knowledge seems simple. I know of no field of surgery that requires more prompt thinking, more ingenuity, more meticulous care than trauma, yet it is not a difficult field if properly applied. As I see it, every medical student should be given a course, and a good one, in first aid; we, as surgeons, should enliven and keep alive and add to the subject of trauma; we should not only be willing to teach, but should initiate teaching not only to our brethren, but to laymen the principles and practices of first aid.

Think of the cases that reach our receiving wards in a moribund condition from shock due to being jerked about, manhandled if you please, piled in a car and sped through the country with the windows open, who would have lived had they been laid along the roadside, wrapped up warmly and kept quiet until arrangements were made for them to travel properly. There was probably liquor in the car, but none for them *after* they were hit. Think of those moribund from hemorrhage when a proper tourniquet or simple pressure might have stopped it. Most bleeding is venous and of course the tourniquet that does not block arterial flow makes it worse.

Then we have the fracture cases, many of which are compounded by anxious friends in their effort to do something. This is particularly true in fractures of the lower extremity, when helpful friends attempt to crowd the patient in some lopsided fashion into the back seat of an auto, although a bit of fence, a small limb from a tree or the handle of the car jack could easily be fastened to the extremity to stabilize it for transportation. But one of the greatest disasters is the patient with fracture of the spine or neck who if kept horizontal in extension will recover without disability, but who instead is doubled up, jackknifed, into the car with resultant crushing of the spinal cord, paralysis and death.

At a recent meeting of the American College, Dr. Frederick A. Besley, of Waukegen, Illinois, criticised the careless manner in which the schools and colleges handle injuries on the football field, particularly injuries to the neck and spine. All of these and more are our responsibilities, but may be reached only through education of and understanding by the laity.

Then also there are abdominal and chest injuries. The latter may be stabilized by strapping or padded support, but if severe should be kept prone and warm until shock is somewhat overcome. Abdominal injuries are usually our charge after admission to a hospital. It is impossible to teach the layman to differentiate shock from internal hemorrhage, but if, before transportation, there is a question, the prone position, quiet and warmth is best for either. But after we have received the case, it is our immediate responsibility; we must determine whether or not it is a surgical abdomen and use to the utmost our acumen whether and when to operate. My thought is that undue haste increases the mortality and that hemorrhage from a solid viscus should not only be recognized but followed in its progress by pulse, expression, blood pressure and blood count observation.

This year the American Society of Traumatic Surgery has been founded because of the necessity of emphasizing and directing the care of trauma; and for the past several years the Fracture Committee of the American College of Surgeons has done its best through arousing professional interest and through its Red Cross affiliation to direct in some manner proper methods of handling fractures by giving courses in first aid to police, firemen, ambulance drivers, filling station employees and drug clerks, who receive certificates of efficiency after passing the examination. That is a good start, but limited.

My thought has been that one way of reaching Mr. Public, who is already injury-conscious and anxious to know what to do, is to have automobile manufacturers supply an illustrated brochure describing first aid. The Texas Oil Company has started to do this. I do not think such propaganda would hurt car sales, but, on the contrary, it would be appreciated by Mr. John Q. Public, who, as I say, is already injury-con-

scious and naturally more afraid than if he knew what to do about it. The folding jack handles supplied in every car make a good arm or leg splint, but he does not know it. Or why not a Thomas splint included in equipment?

I think in such a manner every auto driver will be reached more quickly and directly than in any other way; and if such a booklet were well illustrated diagrammatically, not with pictures of wrecked cars and mutilated bodies, and if it contained carefully prepared but simple instructions, all thinking people would at once become interested, study it, be glad to have some authentic idea of how to proceed in times of stress and appreciate the thoughtfulness of the dealer in his effort at helpfulness.

I believe that the program that has been arranged for you this morning, covering some of the aspects of trauma, both in primary care and prevention of deformity, will emphasize what I have had to say.

My desire, gentlemen, is not to tell you how to handle trauma, but to impress upon you that only through your consciousness of the enormous responsibility that rests upon our shoulders can it be hoped that this dark spot in the sun of our horizon may be brightened.

NEUROLOGIC SIGNS IN TRAUMA OF THE BRAIN AND SPINAL CORD*

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During the past few years a voluminous literature has accumulated with regard to traumatic lesions of the nervous system. Many of the important papers have been presented before this association, and any of you who are treating this type of injury would profit by reviewing the comprehensive papers of Coleman, Pilcher, Semmes, Fay, Munro and others.[1-6 8 10-12 13 14]

After reviewing the literature, it is evident that most observers are in agreement with regard to the details of general management. Meticulous care of scalp wounds, methods of débridement and elevation of depressed fractures of the skull, methods of handling extradural and subdural clots, all of these pertinent details have been emphasized repeatedly by competent authors. Furthermore, the old conception that every fracture of the skull should be trephined, that every patient with head injury should be given hypertonic glucose, and that spinal punctures should be done routinely for cerebral edema—all of these fallacious conceptions have been sufficiently exposed and need no further emphasis. In most instances, the only difference between good and bad management of these cases is the physician's ability to recognize and interpret neurologic signs pointing to the probable pathology within the cranial cavity. It is with the recognition and interpretation of some of these important signs that this paper is concerned.

It must not be forgotten that many patients have associated injuries, the treatment of which may at times take precedence over the head injury itself. One should not allow his alarm over an unconscious patient to blind him to the possibility of a crushed chest, a broken femur, a dislocated hip, a ruptured abdominal viscus or a broken neck accompanying the head trauma. In the automobile injuries, as we see them today, it is unusual for the patient to escape with trauma limited to any one part of the body, and each patient should be thoroughly examined for associated injuries.

To attempt to enumerate all of the abnormal neurologic signs which may occur in head trauma would require a comprehensive course in neurologic diagnosis. However, there are certain phenomena which must be thoroughly known if many of the complications of head trauma are recognized in sufficient time for successful treatment to be instituted.

State of Consciousness.—The depth and duration of unconsciousness is a fairly reliable index to the degree of brain damage. A patient who has not regained consciousness within two hours after injury has sustained contusion and laceration of the brain and, therefore, belongs to the group of serious head injuries. But even the stage of primary unconsciousness may be misleading. A history of a short unconscious period followed by a complete restoration of consciousness and then a recurrence of drowsiness or stupor is one which in no circumstance can be disregarded. This, the so-called lucid interval, nearly always indicates an extradural hemorrhage and demands immediate exploratory

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craniotomy. Because of the frequency of this complication, a safe rule to follow is to keep the patient who has been even momentarily unconscious under strict observation for the first twenty-four hours. If circumstances do not permit hospitalization, his immediate family should be carefully instructed with regard to the danger signals of this complication. In the more seriously injured group, deepening of the unconcious level may be the only indication of an extradural or subdural clot and, therefore, has the same practical significance as the lucid interval.

The duration of unconsciousness is a helpful prognostic sign. Those who remain unconscious for days or weeks are apt to suffer with permanent residual disability. However, this is not always true, as many patients, particularly those in whom the major trauma is limited to the tips of the cerebral hemispheres, may remain stuporous for a period of three or four weeks, yet recover completely.

The depth of unconsciousness is also helpful in prognosis. The patient who fails to respond to auditory stimuli and yet who makes purposeful movements with deep supra-orbital pressure is less severely injured than the patient who fails to respond to this stimulus. Failure to respond to this maneuver is indicative of profound unconsciousness and that patient is apt to have sustained irreparable brain damage.

It is useful to remember that in a patient who is stuporous because of rising intracranial pressure, 100 c. c. of hypertonic sucrose intravenously may restore the conscious level to the point at which a more adequate examination is possible. Also, it is useful to remember that death may be prevented in a case of extradural clot by the use of hypertonic solutions while the operating room is being prepared.

Before leaving the subject of the unconscious patient, we feel that a word should be said about his care. Everyone recognizes the necessity for maintenance of an adequate fluid and caloric intake. Also, the general principles of nursing care are familiar to all. However, one important feature seems to have escaped general recognition, namely, the postural drainage of secretions from the mouth, pharynx and trachea. The orthodox head-up position is unsound mechanically in an unconscious patient whose gag reflexes have been abolished. Many such patients literally drown in their own secretions. By elevating the foot of the bed from 20 to 30 degrees and by turning the patient on his side or face, these same secretions are drained from the mouth by gravity. This simple measure we believe to be the most important contribution to the treatment of head trauma in recent years.

Paralysis.—In the unconscious patient, it may be difficult to decide whether or not there is a partial or a complete hemiplegia. In most instances, the alert observer can sit at the bedside for five minutes, observe the restless movements of the patient and determine whether or not one leg or one arm is weaker than its corresponding member. The nurse will often state accurately that the patient uses one arm better than the other. Weakness of one extremity can be elicited easily in a number of ways; perhaps the simplest one is to exert supra-orbital pressure first on one side, then on the other, and to observe the purposeful movements of the arms. In some patients the first indication of an impending hemiplegia will be an asymmetry of the facial muscles after this maneuver. In the profoundly unconscious patient, simply by lifting and letting fall an arm or leg, one can determine loss of muscle tone on the paralyzed side. Also, by stimulating the skin with pin prick one can often demonstrate weakness or paralysis of the part by comparing the response with that of the opposite side.

Tendon reflexes will be increased in an incompletely paralyzed extremity and lost if the member is completely paralyzed. The Babinski response, when present, is a reliable guide to pyramidal tract damage. Complete loss of plantar response indicates a greater degree of damage to the pyramidal system than does the positive Babinski.

Few of the cranial nerves can be adequately examined in the unconscious patient. However, as soon as it is possible to obtain the patient's cooperation, complete examination of the cranial nerves is essential. Although the olfactory, facial, acoustic and trigeminal nerves and the nerves to the extra-ocular muscles are involved most frequently and in approximately the order given, any of the cranial nerves may be paralyzed from head trauma. If paralysis of a cranial nerve is discovered immediately after the injury, prognosis for recovery is poor because of the probability of direct severance of the nerve by bony fragments. However, if the nerve was observed to be normal early, but became paralyzed subsequently, severance of the nerve is unlikely and, therefore, recovery is probable.

Decerebrate Rigidity.—Most distressing of all patients are those in whom decerebrate rigidity develops. Frequently the flaccidity of complete pyramidal involvement is followed by the gradually increasing extensor rigidity of both upper and lower extremities characteristic of the decerebrate state. The differentiation from pyramidal rigidity depends upon the extensor rather than the flexor hypertonus in the upper extremities. Stimulation of any sort produces waves of rigidity and relaxation. Entirely unlike convulsive movements, both in type and in their long duration, they should never be confused with them. Decerebrate rigidity indicates severe or complete physiologic destruction of the upper part of the brain stem or of the diencephalic and cerebral structures. It can occur from supratentorial pressure; therefore, a very large extradural clot could produce such a state late in its course. If there are other signs of this complication present the decerebrate state should not deter the surgeon from removal of the lesion, even though the chances for recovery are small. Very few patients who are seen in this state survive longer than a few hours or days.

Convulsive Phenomena.—A generalized convulsion occurring in the course of an acute head injury may or may not be significant of a forming blood clot on the brain. In any event, such an occurrence should make the attending physician alert to the possibility of such a complication and the closest observation should be exercised for the next few hours. However, a jacksonian convulsion, that is, one that starts on one side of the body, one arm or one leg, and progresses upward over that side, with or without ending in a *grand mal* seizure, is pathognomonic of an irritative lesion of the cerebral hemisphere opposite the extremities in which the attack started. Unilateral convulsive movements of one side of the face alone have exactly the same significance. In every instance when a focal fit is observed, the patient should be given the benefit of an exploratory craniotomy, because in the majority of cases an extradural, subdural, or intracerebral clot will be found. Furthermore, no time should be lost in preparing for operation once this sequence of events has taken place, because the promptitude with which surgical interference is initiated is directly reflected in the results obtained.

Cerebrospinal Fluid Leaks. — Cerebrospinal fluid discharge from the ear invariably indicates a basilar fracture of the skull involving the petrous pyramid. Cerebrospinal fluid discharge from the nose, likewise, is pathognomic of a basilar fracture into one of the accessory nasal sinuses. Bloody discharge from the ear and frequently bloody discharge from the nose indicate the same type of fracture. If this discharge changes from pure blood to one of mattery consistency, then the presence of a cerebrospinal fistula is established beyond question. If the discharge remains pure blood, coagulation quickly occurs and the discharge ceases. In most instances, cerebrospinal fluid leaks stop spontaneously within a few hours. In others, they may persist until the tear in the meninges has been repaired surgically. In any event, a cerebrospinal fluid leak is potentially a dangerous situation. A leaking ear or nose should not be irrigated nor should any antiseptic solution be injected in the hope of preventing infection. By so doing, organisms may be carried directly into the meningeal spaces. The ear or nostril should be covered lightly with sterile cotton and the cotton changed as it becomes saturated. Absolute rest is obviously indicated and sulfanilamide as prophylaxis against streptococcic infection of the meninges should be given until the leak subsides or is stopped by surgical measures.

Another interesting but infrequent complication of fractures involving the nasal sinuses is pneumocephalus. Air is aspirated through the meningeal tear and the entire subarachoid space and ventricular system may be filled. This complication can be demonstrated only by roentgenograms and is usually discovered coincidental to a routine x-ray examination.

Involuntary Rigidity of the Neck Muscles.—The neck should be examined early and repeatedly for involuntary rigidity. When it occurs, one of two lesions is present: first, the meninges are irritated by blood or infection in the cerebrospinal fluid (bloody meningitis). Second, in addition to the head injury there is a fracture of one of the cervical vertebrae. This latter lesion is frequently associated with head trauma and one should never be so intent upon the condition of the skull and brain as to overlook this possibility. Stiffness of the neck from blood in the cerebrospinal fluid occurs within a few hours, but does not, as a rule, reach a maximum until breaking down of the red cells with decomposition of hemoglobin has occurred, usually from 2 to 5 days. It is in this state that repeated lumbar punctures are of the greatest therapeutic value. By withdrawing blood and decomposed hemoglobin through a lumbar punc-

ture needle the symptoms from meningeal irritation are often dramatically relieved. Also, during this stage the intracranial pressure may be greatly elevated. In such circumstances, repeated spinal punctures for withdrawal of the irritative products of hemorrhage, plus hypertonic sucrose for reduction of intracranial pressure, are most effective treatment methods.

Respiration.—A rapid, labored respiration occurring within the first few hours in an unconscious patient who has been placed in postural drainage is a grave prognostic sign. It indicates a massive brain injury with medullary involvement, either directly or from pressure. Changes in respiratory rate may occur with surgical lesions, particularly with extradural clots, but this phenomenon is seen late and the other classical signs of this lesion may be present early.

Pulse Rate.—When the intracranial pressure begins to mount, either from a forming clot or from tissue edema of the brain, there is gradual slowing of the pulse rate. Only when the pressure has gotten to a point where medullary function is impaired does the pulse rate become rapid. A rise in pulse rate, therefore, particularly when the rate has been profoundly slow, is a sign demanding active measures toward the relief of increased intracranial pressure.

Blood Pressure.—As intracranial pressure increases acutely, the blood pressure likewise increases, that is, until medullary failure supervenes, when the blood pressure falls rapidly. A mounting blood pressure associated with a slow pulse is a positive indication for specific treatment in reducing the intracranial pressure. Basilar injuries, particularly in the region of the hypothalamus or medulla are associated with a marked rise of blood pressure, but in these lesions the pulse rate is almost always rapid from the beginning.

Temperature.—A rise of temperature usually means brain stem or hypothalamic irritation, either from direct trauma or irritation from blood. A high temperature in the acute stage of head trauma is a grave prognostic sign and usually indicates damage to medullary structures. Fever, appearing late in the course of the illness, however, may be due entirely to irritation of blood in the cerebrospinal fluid.

Ocular Signs.—Careful observations on the state of the pupils, particularly as regards their size and responsiveness to light, are most important in the recognition of complications following head trauma. A unilateral dilated fixed pupil is pathognomonic of either an extradural clot on the same side as the dilated pupil or massive contusion and laceration of the cerebral cortex on the same side. This sign is sufficiently constant in extradural hemorrhage to justify the statement that whenever it occurs the patient should be subjected to an exploratory craniotomy. Bilateral dilated fixed pupils are seen only in hopelessly injured patients with massive brain destruction or in the last stages of an extradural clot. In the former condition they have no surgical significance. In the latter, providing there is a clear-cut history of the dilatation's being unilateral in the beginning, an attempt to remove the clot should be made.

Pupils constricted to a pin point in which there has been no morphine administration, are indicative of pontine or brain stem injury. In the last stages, with lesions in this location, the pupils become widely dilated and fixed.

Early examination of the eyegrounds is of little value except in the severely injured group. Retinal hemorrhage within a few hours after injury indicates massive laceration and contusion of the brain, with a grave prognosis. Elevation of the optic disc later in the course of the illness has the usual significance of increased intracranial pressure and may be seen with any of the complicating lesions of head trauma producing this state.

Unilateral or bilateral exophthalmos usually indicates hemorrhage into the orbit from fractures involving the frontal fossa. Such cases are always complicated by ecchymosis of the soft tissues of the orbit and eyelids. Rarely, exophthalmos may be due to an occluded cavernous sinus from trauma. In such circumstances, the exophthalmos and edema are out of all proportion to the degree of ecchymosis.

Vertigo.—Basilar fractures of the skull which involve the petrous pyramid very frequently produce alarming degrees of vertigo. Each time the patient is moved he complains of violent dizziness and may clutch the bed because he feels as if he were going to be hurled from it. Violent nausea and vomiting often accompany attacks of dizziness. During the attacks a well sustained nystagmus is usually observed, regardless of the direction of the gaze, labyrinthian vertigo. Amelioration of these acute symptoms is often possible with the administration of large doses of sodium phenobarbital hypodermatically.

After the acute symptoms have subsided, many of these patients still remain dizzy, especially with changing positions of the head. In this group the sodium free diet with ammonium

chloride administration is usually effective in relieving the vertigo.

Mental Symptoms.—The restless delirium frequently seen with acute head injuries is an outward manifestation of cerebral trauma, particularly at the tips of the frontal and temporal lobes. This state usually subsides as cerebral healing progresses. Complete orientation gradually occurs over a period of several days, but ordinarily the patient has complete amnesia extending from the period just prior to the accident to the time of regaining consciousness.

In the severely injured group, memory defects and often personality changes may continue for months, and in many cases are permanent. When one studies the contour of the brain by the encephalogram one wonders why there is not more profound deterioration than is shown clinically.

In the moderately or slightly injured group, however, the presence of personality changes, memory defects and bizarre behavior of any type may have especial significance because these changes are the most constant findings in chronic subdural hematoma. Subdural hematomas and hygromas are relatively common complications of head trauma. Their presence may not be suspected from neurologic study because in many instances there are no positive signs. Every patient having personality changes of any degree should be subjected to diagnostic air studies because of their importance in prognosis and treatment.

Estimation of the Degree of Intracranial Pressure.—While the signs of increased intracranial pressure as enumerated above are usually present, one does not need to rely entirely upon physical signs for these data. An accurate measurement of the spinal fluid pressure with a manometer is in the large majority of instances an absolute index to the degree of intracranial pressure. It is only when a block exists in the spinal canal anywhere from the level of the foramen magnum down to the spinal puncture needle that this record is inaccurate. When doubt exists as to the state of intracranial pressure, diagnostic lumbar puncture should be performed and accurate pressure readings made.

SPINAL CORD

Fractures of the spine have no special neurologic significance unless the spinal cord or its nerve roots are torn, compressed, or physiologically altered. These bony lesions are always a serious matter in themselves, but when coupled with cord damage of any degree, the situation becomes one of the most difficult and discouraging of all surgical problems.

Those patients in whom the cord substance is unharmed, yet one or more spinal nerve roots are impinged upon, may be completely incapacitated by the root pain and local muscle weakness. Such lesions occur most frequently in fractures of the lower cervical and lumbar regions. Root pain follows anatomical patterns and does not spread beyond the course of the nerve involved; it is exaggerated by movements of the spine, and it may be intensified by coughing, straining, and sneezing.

Root pains as a rule require no specific treatment other than orthopedic measures directed toward the involved vertebrae. Not infrequently root pains in the upper extremities or neck are encountered after trauma when no fracture or dislocation can be demonstrated by roentgenograms. In the face of such root pains, x-ray evidence alone is not sufficient to deter one from the usual traction treatment.

Degrees of Cord Injury.—It is of great importance in both prognosis and treatment to determine how severely the cord is damaged. The complete physiologic lesion manifests itself by a sharp sensory line below which there is complete loss of pain, temperature, touch, vibratory and position sense. Just above this sharp sensory line there is often a band of two or three inches where the sensation is more acute than normal, that is, hyperesthetic zone. This is presumably due to irritation of the roots just above the level of the lesion. In addition to the sensory loss there is complete motor paralysis below the lesion in which the muscles are atonic and all reflex activity is abolished. The skin is dry and warm, due to abolition of the vasomotor mechanism. Several weeks after a complete physiologic lesion, the reflexes return and this is followed rapidly by spasticity of the extensor muscles with defense reflexes below the level of the lesion. With the onset of spasticity the bladder, which prior to this time has been atonic and distended, regains its tone and empties itself automatically. However, any complications which develop in the course of the first few weeks following the injury, such as bed sores or ascending urinary infections, will postpone the onset of the spasticity.

A complete cord lesion occurring immediately following the accident, in the large majority of instances, means severance of the cord by fracture-dislocation of the vertebrae. However, if

there remains one bit of sensation or even an isolated reflex, the lesion is not physiologically complete and, therefore, emergency treatment for the relief of pressure is indicated. If the complete physiologic lesion develops slowly in a few hours or even a few days after the injury, it again indicates that the cord was not completely destroyed at the impact and, therefore, efficient treatment offers some hope of recovery. In any event, however, a complete physiologic lesion is probably never completely restored by any form of treatment and the best that can be hoped for is an improvement in the paralysis.

The incomplete cord lesion varies in direct proportion to the amount of pressure or direct damage to the cord substance. Preservation of any voluntary movement indicates incomplete damage to the pyramidal tracts and the prognosis is usually good for return of function. If position or vibratory sense is preserved or if sensation to pin prick can be localized, even in the absence of voluntary movement, the prognosis is again relatively good.

In the incomplete lesion the reflexes are frequently preserved and may even be exaggerated, with positive Babinski, spasticity, and defense reflexes within a few hours after the injury. This retention of reflex activity is a good prognostic sign if treatment can be instituted early.

Stab wounds of the spinal cord may divide it in half with production of the Brown-Séquard syndrome. Lesions of this type may result in injury with irreparable damage to certain fiber tracts of the cord, leaving others unharmed.

The spinal injury with incomplete cord lesion is a most urgent surgical problem, if lumbar puncture manometric tests indicate a partial or complete blockage of the subarachnoid space. This, the Queckenstedt test, is the positive index for surgical interference in vertebral injuries, especially if the cord lesion is incomplete. Many competent observers believe that even complete lesions showing a subarachnoid block should be given the benefit of exploratory laminectomy. If this course is followed, most of the explorations will be without beneficial effect, but occasionally a dramatic result will be obtained and, therefore, we subscribe to the view that such a patient should be given the hope of an exploratory laminectomy, provided that he and his family understand the situation fully.

Injury to the Lower Spine.—It must be remembered that the spinal cord ends at the lower border of the first or upper margin of the second lumbar vertebra. Injuries, therefore, below the first lumbar vertebra affect the nerve roots of the cauda equina and not the spinal cord itself. The cauda equina may be completely destroyed physiologically at the level of the lumbosacral articulation and still the patient might be able to walk. Such a patient, of course, is incontinent due to destruction of the bladder mechanism. He has complete anesthesia of all the sacral segments, including the perianal region, posterior thighs, and lateral aspect of the legs. The gluteal muscles and hamstrings are weak, but not paralyzed. The gastrocnemii and solei are paralyzed, but the anterior crural groups, the quadriceps, and iliopsoas are not reduced in power. The knee jerks are normal and the ankle jerks are absent. It is thus apparent that when a patient is confined to bed the neurologic lesion may be overlooked, since the patient is able to move his thighs with little difficulty. Similar neurologic pictures develop frequently with fractures at the level of the first lumbar vertebra, that is, where the trauma is sufficient to destroy the sacral segments of the cord without affecting the lumbar nerves which are coursing past the same point. With this anatomical relationship in mind, it becomes apparent how important it is to examine minutely the skin areas and muscles supplied by the sacral nerves when fractures occur in the lumbar spine.

Before closing, we feel a word should be said about the emergency care of the spinal injuries, either with or without direct cord damage. All too frequently these patients are moved about in an attempt to undress them, or are carried in the arms of an attendant to the bed or to a stretcher, or are manipulated extensively in an effort to secure roentgenograms. It is of the utmost importance that they should be moved as little as possible, because of the danger of the bony fragments of the damaged vertebrae impinging further upon the cord. The patient should be placed on a stretcher in hyperextension and moved directly to the hospital. The same careful handling should be adhered to during the clinical and radiological examinations. All too frequently spinal cord damage is increased before the spine is properly immobilized.

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DISCUSSION (*Abstract*)

Dr. Harry Wilkins, Oklahoma City, Okla.—Dr. Spurling has stressed the importance of careful and repeated neurological examinations. He has outlined a very rational consideration of the signs and syndromes that are commonly encountered in head injuries. One will profit by attending to the needs of the organism as a whole rather than confining his efforts to the condition of the head alone. I agree wholeheartedly with Dr. Spurling in his remarks on postural drainage. The benefits to be obtained by employing gravity to improve the venous drainage of the head warrants change back to the semi-sitting or upright position as soon as danger of aspiration has passed. This definitely favors reduction of cerebral edema.

The management of fluid balance is of extreme importance and should include administration of fluids when needed as this is even more important at times than depletion of fluids. I have personally adopted a rather conservative attitude concerning dehydration. As for the use of spinal punctures, I feel that pressure can best be managed by proper administration of hypertonic solutions as retention enemas and intravenously. In those patients showing meningeal signs, as will frequently be observed where subarachnoid hemorrhage occurs, spinal puncture to remove the contaminated fluid will aid in a more rapid and complete recovery.

Dr. Spurling has pointed out those conditions requiring operative intervention. I fully agree with him as to these indications and have nothing further to advise regarding the operative treatment. A very important phase of present-day treatment of head injuries is the follow-up care of these cases. Thorough and repeated examinations will place one in a position to give more logical and truer opinions. These patients usually require considerable reassurance. One must at times act as buffer between the patient and his employer or the insurance carrier. As physicians we should remember that our prime responsibility is to the patient and that his complaints must be reviewed and duly considered. Other factors encountered such as industrial and medicolegal angles should take the position of secondary importance.

Dr. Earl D. McBride, Oklahoma City, Okla.—This excellent paper impresses on us once again the importance of complications following cerebral and cord injuries which require the attention of specialists in different fields. The internist, the urologist and the orthopedic surgeon, in addition to the neurologic surgeon, often must combine their efforts in the care of this class of cases. Speaking from the orthopedic standpoint, efficient splinting is often very essential, and many times overlooked until rather severe contractions occur. When the patient is lying in bed with the feet unsupported, equinus deformity is very likely to result. Many times braces and splints properly applied will greatly facilitate the handling of such cases. It is not generally recognized that proper bracing and orthopedic measures may often be devised to assist the patient when he has partly recovered from paralysis.

I have had several patients with the bladders and rectum incontinent and paralysis complete, yet double-bar full length leg braces with back braces were applied so that the patients could at least be stood up in the erect position for certain occupational duties. I have a patient running a news-stand and another patient who is private secretary to the dean of a college. Both of these are severely paralyzed, but orthopedic measures and assistance in respect to wheel chair facilities have made them almost totally independent from the economic standpoint.

TREATMENT OF UNUNITED FRACTURE OF THE NECK OF THE FEMUR*

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Any type of fracture that frequently fails to unite by bony union is of especial interest, and possibly the one fracture giving rise to the greatest amount of discussion today is the fracture of the neck of the femur. The older writers came to regard a good result in this type of fracture as a rarity, so much so that many of these cases were consigned unnecessarily to a life of invalidism. Royal Whitman, the exponent of the first real advance in the treatment of fracture of the neck of the femur, some years ago spoke of the mental attitude of the physician towards these fractures as being one of "innocuous desuetude." In spite of the many types of operations proposed today for the fresh fracture of the neck of the femur, the writer believes that the Whitman abduction method, if carefully followed, has a wider range of usefulness than any of the operations proposed. The great advantage offered by the operation of nailing, pinning, or bone grafting is due to the fact that these surgical methods have succeeded in

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*From the Crippled Children's Hospital.

stressing to the medical profession the importance of an accurate reduction of the fracture and an assurance of adequate fixation. These surgical methods are particularly applicable in centers equipped with hospital facilities, but undoubtedly many cases will continue to be treated under conditions in which the closed method of reduction, following carefully the technic advocated by Royal Whitman, will be considered feasible. An extensive study of the end-results of the open versus closed treatment, performed under similar conditions, may decisively prove this point, but at present statistics would appear to favor treating these cases by some form of internal fixation.

We can, however, say that in spite of careful surgery done under practically ideal conditions, the percentage of bony union following a fracture of the neck of the femur is still deplorably low. This especially applies to the cervical and subcapital type of fractures. Not more than sixty to seventy per cent of these heal with bony union. This means that at least one patient out of four may anticipate non-union as an end-result.

It is only fair to say that many factors beyond the control of the surgeon contribute to this. The average patient is over sixty years of age and is frequently a poor surgical risk. Also, the location and the direction of the fracture in the neck region is beyond the control of the surgeon, and it is a well known fact that the nearer the fracture approaches the head of the femur, the poorer the prognosis for bony union with any form of treatment. In addition to these factors, the degree of bone and soft tissue injury received at the time of the fracture may be partly responsible for the subsequent nonunion.

These patients, after they have developed nonunion, give a persistent complaint of pain on any attempt at weight bearing. The instability afforded by the ununited fracture, and the shortening due to the upward riding of the greater trochanter above the superior rim of the acetabalum are familiar features and the solution must lie in directing our attention toward some type of operation that will relieve the pain, restore the stability and obtain, if possible, some increase in the length of an already shortened extremity, while preserving motion in the reconstructed hip. Irrespective of the previous type of treatment received, whenever the patient presents a frank non-union with absorption of the neck and necrosis of the head, one must assume that further fixation by nail, pin, or plaster alone is unnecessary. Therefore, the attempt to preserve a necrotic head with the hope of its being revascularized following immobilization or some type of pegging operation is hardly ever justified.

Needless to say, a case of generalized arthritis or marked arthritis of the hip joint will not lend itself particularly well to any form of operation. On these cases conservative treatment in which physiotherapy, limitation of physical activity, and raised shoe on the affected side, may be the method of choice. Occasionally a Shantz or McMurray type of intertrochanteric osteotomy is a useful procedure in these cases. Arthrodesis of the hip is also another procedure that should be considered, but as long periods of immobilization in plaster are not well borne by the elderly individual, it has a very limited application.

A very careful study of the x-ray preoperatively, as well as a knowledge of the expected physical activity of the patient, may at times decide the type of operation indicated for the individual case. X-rays may disclose the rapidity with which the neck is being absorbed. The viability of the loose head fragment, the upward riding of the greater trochanter above the rim of the acetabalum, the depth of the acetabalum and the absence or presence of a suitable joint space are other important x-ray findings; all of which must be considered in evaluating the various types of reconstruction operations at present available. It should be clearly understood by the patient that with any reconstructed joint there will be some limitation of motion and it is helpful if we can determine by careful questioning of the patient what will be the probable demands placed on this newly made joint.

In the severe type of case we have, for the past seven years, been using a method that will be shown in the movies. We have felt that the procedures commonly employed, such as Albee, Brackett or Whitman reconstruction operations, inadequately lend themselves to treating the severely disabled patient who presents x-ray evidence of partial necrosis of the head fragment, marked absorption of the femoral neck and upward riding of the greater trochanter. This new type of reconstruction operation was originally described in 1935, at which time six cases were reported, and in brief it consists in

"a careful removal of the abductor group of muscles from their normal insertion, removal of the necrotic head fragment, and the insertion of the upper end of

the femur deeply into the acetabulum. The abductor muscles are then resutured downward on the shaft of the femur into a bony canal, and the patient is immobilized for one month in a plaster spica."

To date, over thirty patients have been operated upon by me by this method, and in a recent questionnaire we have found that seventy other patients have been operated upon throughout the country, making a total of over one hundred reconstruction operations done by this method to date.

THE ROLE OF PLASTIC SURGERY IN THE TREATMENT OF MALIGNANCIES ABOUT THE FACE*

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I have chosen to use the term "role" because I feel that the treatment of malignancy as practiced today, is a drama, a drama in the fullest meaning of the word, the largest percentage of cases being tragedies, a fair percentage straight drama and, in a few cases, a comedy is enacted from a mistaken diagnosis and the patient lives happily ever afterwards. It is a drama, because the actors, in the person of the patient playing the leading part, is supported by relatives, friends, social workers, technicians, statisticians, interns and physicians, who are coming on and going off the stage of everyday life, each one saying his line or enacting his part, realizing that each is but an integer in a complicated process. A drama, because to be successful, the treatment of malignancy must have complete cooperation of all parties concerned, must have perfect timing in the order and sequence of various modes of therapy, must have supportive aids as illustrated in relieving the body of various contributory factors, and finally, must reach a climax. The one most to be desired is to send the patient home as nearly restored as possible, physiologically, functionally and in appearance, carrying with him the "hit song" of the play, "I'm cured of cancer."

Now, just what is the role of plastic surgery in the treatment of malignancies about the face? The answer is, that it is a triple role, one at times played entirely independently of the other two, and at times blending into the others, the roles of prophylaxis, therapeutics and restoration.

Plastic surgery may play a very important part in the prophylaxis of malignancies by:

(a) The removal of scars due to either physical, chemical, or direct injury, which might be so situated that they would be the sites of long continued mild irritation.

(b) The removal, or closing over, of low grade, long continued ulcers, particularly those which might have followed x-ray therapy, badly fitting dentures, glasses or the use of pipes.

(c) The removal of misplaced embryonic tissue, which might undergo uncontrolled growth, as exemplified in:

(1) Branchial cysts
(2) Thyroglossal duct cysts
(3) Dermoid cysts
(4) Nevi or moles, pigmented and hairy
(5) Dental cysts

(d) The removal of benign tumors, which might subsequently undergo malignant degeneration, as:

(1) Angioma
(2) Lymphoma
(3) Fibroma
(4) Lipoma
(5) Chondroma
(6) Mixed tumors of the parotid gland
(7) Epulis
(8) Melanoma

The role of plastic surgery as a therapeutic measure in the treatment of malignancies about the face may be either a major or a minor assignment.

In a major capacity we find:

(A) The complete surgical removal of well localized new growths as:

(a) Carcinoma.

(b) Adenocarcinoma, arising in sebaceous or mucous glands.

(c) Sarcoma, chondrosarcoma and myxosarcoma.

(B) The complete surgical removal of a new growth and all the associated lymph nodes.

(C) The surgical removal of growths which are known to be radioresistant or situated in such a region that large doses of radiation would result in wide tissue destruction.

The minor activity would be shown in a co-

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operative or auxiliary capacity in assisting some other form of therapy, as illustrated in:

(a) The removal of portions of a new growth to facilitate radiation therapy.

(b) The assistance of insertion of radium needles or plaques.

(c) The ligation of an important blood vessel supplying an involved area before radiation is attempted.

The role of restoration or reconstruction is becoming more important and attracting more attention in recent years than ever before.

Parts or entire members of the body may be destroyed, either by the malignant growth or are lost as a result of the treatment. In either instance, plastic surgery can be of benefit in restoring the part and at times it may defy one's diagnostic acumen to tell the reconstructed from the real. We see examples of this type of work in the formation of noses, lips, ears, eyelids and eyebrows.

Secondly, reconstructive surgery may correct disfiguring scars or contractures which have resulted from treatment of the malignancies, as ectropion, entropion, partial atresia of an eye, external nares or mouth.

Thirdly, it may reconstruct a part in such a manner that it may be useful, yet not anatomically restored, as: the lining of an eviscerated orbit to accommodate an artificial eye, or the forming of a gingival sulcus to permit the fitting of a denture.

ETIOLOGY AND TREATMENT OF STRANGULATED, THROMBOSED, INFECTED, AND GANGRENOUS INTERNAL HEMORRHOIDS*

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Kilbourne,[1] discussing prolapsed, strangulated, gangrenous hemorrhoids in 1936, said, "Such cases are not usually operated upon by competent proctologists in this stage." This statement evoked from Cartwright[2] a paper in which he implied that the term "strangulated" included strangulation, thrombosis infection and gangrene of hemorrhoids. Several years earlier, Smith[3] said that multiple thrombosis of the superior hemorrhoidal veins are usually referred to as acutely strangulated piles. Other similar statements make it necessary that we clarify our terminology.

A simple internal hemorrhoid is a sacculated varicosity of the superior hemorrhoidal plexus, which may or may not protrude through the external sphincter. The complications of internal hemorrhoids are: strangulation, thrombosis, gangrene and infection.

Strangulation is defined by Dorland as,

"Choking or throttling; * * * arrest of the circulation in a part, due to compression."

Webster defines the term as,

"Having the circulation stopped by compression; attended with arrest or obstruction of circulation caused by constriction or compression."

According to the definition therefore, strangulated hemorrhoids are piles whose circulation is interfered with by constriction or compression. This interference occurs only in protruding piles. The primary cause of this interference is the looping down and the stretching of the already varicosed vessels, the walls of which are often also further affected by the indolent infection usually present in internal hemorrhoids of long standing.

While it is true that prolapse occurs from time to time during defecation and is replaced with some traumatism, as a rule there is slight discomfort and little reaction of the tissue other than a chronic interstitial fibrosis. To produce strangulation of the protruding parts other factors are needed. Slight constriction caused by acute sphincter spasm, precipitated by irritation, tenesmus or frequent straining at stool, and the concomitant trauma or infection, are usually sufficient to complete the clinical picture. The blocking of the return flow of blood results in stagnation and consequent swelling and exudation of fluid into the parts.

Let me emphasize here that the acute spasm of anal sphincter soon gives way to an atonic condition or stage of partial paralysis. Then, as has been stated by Smith,[3] Cartwright,[2] Bacon,[4] and others, it is never difficult to insert one, two or even three fingers into the anal canal without causing the patient much discomfort. For this reason, some doubt that anal spasm plays any part in strangulation. The explanation is that the part played by constriction is over with in an early stage, and it can be verified only at that time.

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It is not the constriction of the sphincter muscle that determines whether or not strangulated hemorrhoids are reducible, but it is the amount of edema surrounding the protruding hemorrhoids and extending out into the perianal tissue.

Thrombosis is the formation of a clot in the lumen of a vessel. Slowing or stopping of the circulation in the dilated veins is the chief predisposing factor in multiple thrombosis of the hemorrhoidal veins. It is my belief that the usual cause of such stasis in protruding internal hemorrhoids is again the looping down and the stretching of the vessels together with the temporary constriction or anal spasm. The precipitating factors in the development of multiple thrombosed internal hemorrhoids are a low grade bacterial disease of the varicosed vessel walls and acute traumatic injury of the prolapsed parts.

Also, when acute infection or a flare-up of a chronic infection is superimposed on the already diseased pile, protruding and then concomitant trauma, often causes multiple breaks in the weakened endothelial lining of the dilated veins which will result in multiple thrombosis in the protruding mass.

If the blocking of the circulation to and from the protruding mass is complete, either from infection, strangulation, or strangulation and multiple thrombosis, sloughing or gangrene of the protruding parts occurs.

Infection is usually present in a dormant state in protruding internal hemorrhoids of long standing and may become active when other complications occur. Acute infection adds to the severity of the condition and may cause or follow thrombosis or gangrene.

One or more of the complications of internal hemorrhoids may be present or follow in sequence in the same case and clinically should be designated according to the complication or complications present.

There is still a wide difference of opinion in the treatment of the complication in internal hemorrhoids. There are two schools of thought. The first group believes that often better results and less risk are obtained by palliative measures, and prefers operation after the acute condition has cleared up. The second group on the basis of "what is good for the goose is good for the gander," advocates immediate operation for all acute complications of internal hemorrhoids. With this last group I take issue, believing that there is no one method suitable for all cases and that the treatment of each case should be determined by the condition present at the time of examination.

Strangulated internal hemorrhoids which are reducible should be reduced and the time and method of treatment be determined to suit the case. Irreducible strangulated internal hemorrhoids, without other complications, may be treated by palliative measures or operation. The details of the operative procedure I have described elsewhere.[5] Where the prolapse is very great and the edema is extensive into the surrounding perianal tissues, it may be better to defer operation for fear of removing too much tissue, which may become apparent only after the swelling has receded. Otherwise operation is usually the method of choice.

Multiple thrombosed internal hemorrhoids, with constriction of the protruding parts, to prevent gangrene are best corrected by immediate operation, but this is not often seen. However, when the process is extensive and the hemorrhoidal masses extend all the way around the anus without constriction, palliative procedures are to be preferred until the acute symptoms have subsided and fibrosis has developed. In some such cases spontaneous cure may result.

When acute infection follows strangulation, multiple thrombosis or gangrene, it is most important to be content with palliative measures. Operative procedures at this stage prolong the convalescence, result in frequent postoperative skin tabs, tend towards stricture, may spread the infection, resulting in local abscess or even in liver abscess, and in a few cases death has been reported. If operation is to be undertaken during the acute condition, local anesthesia should never be used.

The palliative treatment consists of rest in bed, soft diet sedatives or opiates, hot boric compresses, mild laxatives or saline enemas. When the infection is very severe, the offending organism being a virulent streptococcus or perhaps the gas bacillus, sulfanilamide in doses of 45 to 85 grains a day improves the prognosis greatly. When the acute condition has cleared up, operation may be much more safely performed.

Gangrenous hemorrhoids, unless seen early, are best treated by palliation, allowing healing by granulation. Hot sitz baths, antiseptic dressings and avoidance of stricture "by gentle stretching and smoothing out with the finger"[5] are the important factors in treatment. Some-

times it is necessary to remove skin tabs and to correct other deformities at a later date.

This paper is a plea for more definite terminology so we may have a better understanding of the common complications of internal hemorrhoids, and for individualized treatment of each case.

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PATHOLOGY OF COMPLICATED CATARACT*

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By the term complicated cataract one understands an opacity in the lens that occurs as a result of another lesion within the eyeball. The most common causes of complicated cataract are inflammations, situated mostly in the anterior zone, such as serpiginous ulcer and iridocyclitis. Among other causes are long standing peripheral chorioretinitis, detachment of the retina, retinitis pigmentosa and malignant growth. Belonging in the category of complicated cataract is the cataract that develops in absolute glaucoma.

From a surgical standpoint complicated cataract falls into the following groups:

Group A, Non-Operable Cases.—Not infrequently the clinician has to deal with an opacity in the lens that is purely an accidental complication in an eye that is so severely damaged by some other intra-ocular lesion as not to be able to stand operative interference. The loss of vision is to be ascribed not so much to cataract as to damage done by disease in the retina or choroid.

Group B, Operable Cases, or Cases of Complicated Cataract Simulating Primary Cataract.—A complicated cataract may be operable when the lesion causing it is not serious and it is the cataract itself that rules the clinical picture. The original cause may be so insignificant that the cataract appears to be a primary one, and only careful examination reveals changes in the iris or finest deposits on Descemet's membrane as signs of the secondary character of the cataract.

Group C, Cases of Cataract Caused by Metabolic Disturbance.—The heterochromic cataract and the by no means rare cataract concurrent with mild iritis, both without adhesions, are sometimes recognizable only as complicated by the discovery of finest deposits on Descemet's membrane. Such deposits can be present in both eyes, simulating all the more ordinary senile cataract. Not infrequently there is a monocular cataract which gives the impression of being complicated because of its grayish-blue appearance or of its apparent liquefaction, and yet no cause can be found. The iris and the anterior chamber, and, after operation, the retina, appear to be normal by every means of examination. The underlying cause is probably a latent cyclitis which, while it produces no deposits or vitreous opacities, or recognizable change of tension, has really caused lenticular opacity and brought the case into the class of complicated cataract. This seems all the more likely because of its unilateral occurrence and the normal lens in the fellow eye.

As to the effects of changes in neighboring tissues and fluids on the metabolism of the lens, physiologic and especially chemical researches have thrown light on what might be termed the "small free state" of the lens. Inseparable from these modern methods of research is the older form of investigation, namely, the histopathology of the parts, and yet no systematic attempt to review microscopic details in connection with cataract has been made for many years. On the part of the practitioner who now employs the slit lamp, there should be a revival of and a keener interest in lesions in the neighboring structures that may lead to opacities in the lens. One armed with such knowledge is better able to diagnose, to treat, and to forecast the course and outcome of a cataract.

LESIONS IN NEIGHBORING STRUCTURES THAT MAY PRODUCE CATARACT

(A) *Inflammation.*—The severity of the inflammation does not seem to be so important as the type. If one compares cases of highly purulent rheumatic, gonorrheal or syphilitic iritis, in which after recovery the lens is practically always transparent, with cases of mild serous iritis showing fine deposits and no posterior synechia, he receives the impression that pus and

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toxins are probably not so serious in the production of cataract as is interference with metabolism. By this it is meant that in many instances toxins do not exert a direct influence on the interior of the lens, whereas mild inflammation may so change the metabolism as to lead to cataract.

Lesions in the Anterior and Middle Zones of the Eyeball.—Very purulent ulcers of the cornea as a rule do not cause cataract as long as no perforation or extensive necrosis of the cornea or necrosis of the iris takes place. Inasmuch as perforation of the cornea in adults is necessary for the production of cataract, it should be emphasized that the opacity is due rather to displacement of and mechanical insult to the lens than to the so often accused toxins of a serpiginous ulcer. That toxins reach the pupil and lens before perforation occurs is proved by the presence of hypopyon. After perforation the anterior chamber is drained, the hypopyon disappears, the ulcer clears up, and the ciliary injection abates as signs of ebbing toxicity, but the cataract remains and progresses.

The above statements are not applicable in their entirety to the more susceptible lens epithelium of the new born and infants, which seems to be very prone to proliferate. Even so it is a clinical rarity to find an anterior capsular cataract when the ulcer has not actually perforated.

Inflammation of the iris and of the ciliary body is found in a majority of cases of complicated cataract. Iris bombé is not an infrequent finding. The slight change in the lens found in anatomic material is sometimes in amazing contrast with the enormous change in the iris. Toxins from the ciliary body, although it is so far removed, exert a direct influence on the lens. However, the near-by iris stroma is separated from the lens by the thick insulating pigment epithelium and the sphincter and dilator muscles and it is only when the iris is necrotic and the pigment epithelium is dispersed that lesions in its stroma may exert toxic irritation in the lens.

Lesions in the Posterior Zone of the Eyeball.—Lesions in the posterior zone may lead particularly to the formation of posterior cortical cataract. Reference is made directly to detachment of the retina and to diseases of the periphery of the retina without detachment. A retinal detachment of itself does not seem to be able to cause a complicated cataract very soon after it occurs or very readily. It is, as a rule, later, when severe iritis ensues, that cataract is present. So it appears that the mischief in the lens lies not in the detachment of the retina, but rather in changes in the vitreous which primarily had led to the detachment and to subsequent inflammation.

Anterior chorioretinitis and retinitis pigmentosa are accompanied by a specific form of posterior cortical cataract. It is doubtful that toxins from these lesions really cause the cataract. In practically all of these cases under the microscope an atrophic retina with attenuated blood vessels is found, arousing a suspicion that the vitreous had first suffered from impaired metabolism at its base at the ora serrata. In all likelihood the posterior layers of the lens depend on the vitreous to a limited extent for their nutrition and suffer with it when its metabolism is disturbed.

It is opportune to note that gross changes in the stroma of the vitreous are usually not combined with changes in the lens. Vitreous detachment is frequent in myoptic eyes, even in young persons. It is a familiar experience to watch a case of synchysis scintillans for many years without noting any considerable change in the lens. Synchysis is an astonishing phenomenon in which a quantity of foreign substances are present in the abnormally soft vitreous, and yet the lens may remain clear and vision unimpaired. These facts lend support to the theory that the nutrition and metabolism of the lens are governed mainly by the aqueous.

Inflammation forms by far the largest group of intra-ocular diseases, and as inflammations are prone to cause cataract, it follows that a majority of cataracts originate in this source. It is noteworthy that large and extensive tuberculous lesions of the conglomerate type generally produce minor changes in the lens as compared with those produced by chronic iridocyclitis and detachment of the retina.

(B) *Glaucoma.*—Clinically a cataractous lens is encountered almost regularly in cases of old absolute glaucoma. Glaucoma is one of the subsidiary factors in the causation of cataract, as is senescence, in connection with a direct exciting cause.

In chronic glaucoma the lens is usually swollen and the capsule under tension. Every surgeon knows that after the best performed operation an opacity of the lens may develop, which may remain stationary or slowly increase to a total cataract. As this happens in advanced glaucoma, especially in eyes that are already

aged, there seems to be no doubt that glaucoma forms a definite predilection to lens opacities. An eye almost blind from glaucoma, when operated upon, is apt to develop a total cataract even though the lens has not been touched. Such an eye not infrequently becomes inflamed and has to be removed.

Histologically the lens would be apt to show a tiny rupture of the capsule in the region of the operating wound. One should not reproach himself for a wrong maneuver in operating but he should consider that the capsule ruptured spontaneously when with the loss of aqueous the lens advanced against the cornea and wound. When the lens is already swollen and the capsule under tension, once the support of the surrounding fluid is lost, and the equator is pressed against the wound, easily a small break may occur in the capsule without the knowledge of the operator. This explains why it is that occassionally after an Elliot trephining, when no instrument has entered the eye, a complicated cataract develops, which does not become manifest until three or four weeks after the operation.

(C) *Tumors.* — Fortunately, in its early stages a tumor does not have any effect on the transparency of the lens so that the difficulty of diagnosis is not increased by any complication in the lens. However, if the lens is opaque and glaucoma is present, one has to consider the possibility of a tumor just as he should do in every case of detachment of the retina, it being immaterial whether the detachment is flat or globular, appearing solid or translucent, with or without tear, and whether or not hemorrhage is present in the retina. The anterior chamber may be deep or shallow. There may be iritis or an entirely normal anterior half of the globe. In all of these cases by careful transillumination one ascertains or excludes the presence of an intraocular growth.

A tumor may produce a complicated cataract in four ways.

(1) By resorption. A tumor may touch the lens and indent it, or dislocate its substance, and finally it may cause resorption at the equator. A large sector of the lens may be resorbed without the remaining portions becoming cataractous. This is most advantageous for diagnosis. It is always a matter of wonder how much a lens can stand from an encroaching tumor.

(2) By necrotic influence. In a way different from contact a tumor may excite alterations in a lens, that is, when the tumor undergoes necrosis and the resulting toxins act upon the uveal tract and the lens. When the tumor is very necrotic the toxins may cause death of the lens epithelium and disintegration of its substance while at the same time the lens may lose its support through destruction of the zonular fibers and luxate. In other cases the toxins may be milder so that the iris does not become entirely necrotic but is able to react with a severe inflammation, which toxins at the same time may irritate the lens epithelium and cause it to proliferate. It is evident that cases with a triology of iritis, complicated cataract, and secondary glaucoma are not easy of diagnosis.

(3) By changed metabolism. Certain tumors apparently cause cataract by a low grade irritating influence, as, for instance, Hippel's angiomatosis of the retina, in which not rarely a cataract develops. This is not a circumscribed tumor-like sarcoma or glioma but a more diffuse growth, or, it may be said, change in the whole extent of the retina showing signs of inflammatory reaction. At least clinically, in angiomatosis stripes along the vessels and retinitic foci are seldom missed.

One tumor, glioma of the retina, which is characterized by a high degree of necrosis, certainly does not induce cataract by a change of metabolism because the lens remains clear for a remarkably long time, even when the tumor is in apposition to its posterior surface and necrotic particles of glioma are in the anterior chamber.

(4) By secondary glaucoma. In a number of cases the growth of the tumor has nothing to do with the formation of cataract. It is not until the glaucomatous stage of the tumor sets in that the lens becomes affected in the manner already described.

(D) *Necrosis of Surrounding Tissues.*—Death of the surrounding tissues may involve the tissues of the lens, as in metastatic ophthalmitis, necrosis of a tumor and in contusion. It should be borne in mind that both lens epithelium and lens fibers are living matter, and that under the effects of toxins not only may the epithelium die but also the fibers may disintegrate. After death of the lens epithelium takes place, the production of new lens fibers and the formation of a capsular cataract are impossible. An intercellular substance like lens matter or connective tissue possesses some life, although it is without nuclei, but if one recalls that in a cell not only is the nucleus alive but also the protoplasm, then one realizes that a lens fiber may have a certain vitality like a nerve or muscle fiber. Lenses

showing primary necrosis of epithelium and of fibers may be found now and then in atrophic and shrunken globes, embedded in connective tissue and showing cortical calcification.

Necrosis of the iris and ciliary body may produce cataract, not that the lens epithelium becomes necrotic, but rather it is irritated by toxins, just as occurs with many poisonous substances which, when concentrated, kill, but when diluted, only irritate. In this type of cataract altered conditions in the posterior chamber play a role. The scattered pigment of the iris and the necrosis of the ciliary processes are signs that the lens is no longer in normal surroundings and that its nutrition suffers.

(E) *Mechanical Causes.* — The pressure exerted by an aggressive tumor as a cause of local lens opacity has been mentioned. This is an example of a mechanical effect and not of a toxic or nutritional effect. When the lens is pressed against the cornea, the epithelium may undergo changes and these will be more severe in the pupillary area than behind the iris. The probable reason is that the iris acts as a soft cushion interposed between the hard surface of the cornea and that of the lens capsule.

Traction by membranes, subluxation, and pressure from encircling membranes may act as mechanical insults. In enlargement of the globe, direct flattening of the lens due to stretching is a familiar picture. What role a change in the shape of the lens by traction plays in the development of a cataract is difficult to estimate, but it must be considerable because in these cases a complicated cataract is formed sooner or later.

PRACTICAL HINTS

Any attempt to prevent a complicated cataract must be directed against the underlying disease. In recurring iritis and in inoperable detachment of the retina one is powerless to thwart the complication of cataract.

A striking prevention of cataract is early operation for glaucoma, which means at a time when little or no pathologic excavation of the nerve head is present. On the ground of cataract alone, it is a serious mistake to wait for an operation, when the tension is running between 25 and 30, the entire intra-ocular vascular system insidiously deteriorates, although central vision, blind spot, and field may not be perceptibly changed.

A condition in which there is a method of preventing a complicated cataract is that of a splinter of steel in the eye so situated as to defy removal. Practically always a siderotic cataract develops as a complication in the course of six or twelve months, whether the lens capsule is ruptured or not. Repeated paracenteses of the anterior chamber may prevent the formation of a cataract because with each escape of aqueous a certain amount of dissolved iron salts is removed and with each puncture the metabolism of the whole globe is improved. A paracentesis will probably have to be made every two months until the siderosis disappears and the brownish iris assumes its normal color. If the vision has already been reduced, the retinal blood vessels attentuated, and in addition the fundus has become spotted, one should not lose hope because finally he will be able to check the disease by a series of punctures which, although disagreeable, are not dangerous and will incapacitate the patient but a short time.

RULES FOR OPERATING UPON COMPLICATED CATARACT

A good rule to follow is this: A complicated cataract may be operated upon only when the eye has been free of every symptom of inflammation for at least one year, which is intended to mean, specifically, absence of deposits on Descemet's membrane, of grayish nodules in the iris, of exudate in the filtration angle, of cloudy aqueous, of tenderness and of hypotension. Strict observance of this rule will avoid relapse of inflammation or atrophy of the globe.

As with other rules the above rule has its exceptions. The first exception is on the favorable side. A case of cyclitis with deposits on Descemet's membrane, with normal or slightly elevated tension, but showing no adhesions and no ciliary injection, not even after long and careful examination, may be safely operated upon. After operation the vitreous does not become cloudy and neither do membranes develop or recurrence of inflammation happen. On the contrary, once in a while the deposits disappear for good after an iridectomy.

The second exception to the rule is on the unfavorable side. No form of operation on the complicated cataract of sympathetic ophthalmitis should ever be attempted as long as any vestige of vision is left. Sympathetic uveitis is easily stirred up, no matter whether inflammatory signs are discernible or not. The reason for this special irritability is probably that insidiously in the posterior part of the uvea new nodules are constantly forming, albeit the anterior part

appears to be perfectly quiescent. Even though years and decades may have passed, the danger in operating is ever present.

A cataract in an eye suffering from detachment of the retina often has a peculiar whitish and disfiguring appearance so that the patient insists on having something done for cosmetic reasons. An operation in retinal detachment is not only difficult, but it is dangerous because the lens tend to sink back and the vitreous to flow out at the making of the incision. Even the iris retracts and escapes the forceps in an attempt to do an iridectomy. The protruding retina may be touched and injured by the loupe, causing inflammation and resulting in atrophy of the globe. Hypotension in retinal detachment contraindicates cataract extraction because the globe may not be able to fill up again after being deprived of so much of its contents. Hypotension is a sign of an atrophic ciliary body and of an impending atrophy.

A peculiar condition of complicated cataract is that found in congenital coloboma of the iris and choroid and in aniridia. Faulty light perception may not be taken seriously by the surgeon because of a preconceived idea that the trouble lies in the choroid and not in the retina, but as a rule partial detachment of the retina is at the bottom of the faulty projection. Such cases of detachment, even with holes in the retina, in the area of the coloboma have been described. An operation on a cataract under these circumstances may not only yield a disappointing visual result but may be followed by cyclitis.

CHOICE OF OPERATIONS

Complicated cataract due to chronic recurrent iridocyclitis is the indication par excellence for preliminary iridectomy, which may serve the following purposes:

(1) It informs one as to the consistency of the iris.

(2) That which is of the greatest consequence, it enables one to see how the eye recovers from an operation and whether or not a recurrence of inflammation is to be expected at the next step. If no undue reaction is shown, then the actual extraction of the lens may be attempted with a clear conscience, but not until five or six weeks have elapsed. In the extracapsular operation one should remove an especially large piece of the anterior capsule so that the nucleus may be expressed without traction.

(3) If, after an iridectomy, an excessive hemorrhage happens, it is to be taken as a sign that the iris is atrophic, that its original blood vessels are sclerosed and that new ones have been formed without adventitia. The adherence of the pupillary border to the lens keeps the blood vessels on the stretch and by preventing them from contracting increases the liability to bleeding. Blood in the anterior chamber of an eye with old iritis is resorbed slowly and with difficulty. Therefore, at the time of operation, after a brief interval, it is permissible to try to remove a part of the blood by gentle massage, leaving as little as possible for resorption. Irrigation is not advisable in irritated eyes. A great advantage of a preliminary iridectomy in a case of complicated cataract is that it prevents bleeding at the time of extraction and mixture of blood and lens substance which tends to organize into a secondary cataract of the membranous type.

Turning to the question of the intracapsular operation in complicated cataract, a number of contraindications arise as to its ever being employed.

(1) Frequently the lens is adherent in great extent to the iris and ciliary body by strands of connective tissue, which may be torn by the pull causing hemorrhage and especially laceration of the retina, to be followed by detachment and this in turn by atrophy of the globe. Spontaneous atrophy after chronic iridocyclitis does not necessitate removal, but when in such an eye atrophy has been induced by cataract extraction enucleation is imperative to guard against sympathetic ophthalmitis.

(2) In cases of serous iritis, that is, in iritis without adhesions, the intracapsular operation is contraindicated, not so much because of possible hemorrhage from traction but because when the vitreous and the aqueous are brought into immediate contact it may happen that cells which formerly appeared only in the anterior chamber as deposits may now enter into the vitreous. These same cells confined to the anterior chamber as deposits do not impair vision to any considerable degree, but in the vitreous they are diffusely distributed, so that they blur the vision, probably because they move about with the vitreous trabeculae.

If in a case of bilateral serous iritis a comparison is made between the one eye that has had a cataract removed by the intracapsular method and the other non-operated eye, one

may sometimes see that the deposits on Descemet's membrane in the non-operated eye are more numerous than in the fellow eye. In the latter eye whitish cells and circumscribed opacities may be detected clinging to the scaffolding of the vitreous. No form of treatment seems to have any effect on these cellular vitreous opacities.

It is known that serous iritis may disappear entirely after a cataract extraction. To this group of cures belong cases of heterochromia and monocular and binocular cyclitis with deposits in the anterior chamber. But the cure only happens when an extracapsular operation has been done.

DISCUSSION (*Abstract*)

Dr. B. Y. Alvis, St. Louis, Mo.—I was much interested in Dr. Samuel's statement concerning the removal of cataractous lenses from eyes blind from detachment of the retina. We have operated upon several such eyes in comparatively young persons, removing the cataract for cosmetic reasons, and so far have been very fortunate in that the eyes tolerated the removal of the lens as well as in ordinary cataract cases. Most of these operations have been done leaving the pupil round. The zonule is usually free and the lens is easily removed in the capsule. If there is any difficulty in getting the lens to dislocate, of course, the capsule is ruptured and a simple extraction is done, irrigating the soft lens matter.

Since hearing Dr. Samuel's very excellent discussion of such cases, I shall probably be a little more cautious in the future, but our clinical experience has led me to believe that in most such cases in young persons, one is not taking an undue risk, and that the cosmetic improvement is well worth the effort.

Dr. Ray K. Daily, Houston, Tex.—I should like to ask Dr. Samuels if he can explain why his conclusions do not agree with our clinical experience. In my own experience with cyclitic cataracts the best results were obtained when I succeeded in removing the lens in the capsule. When the operation was extracapsular there was usually a secondary cataract which required frequent and repeated discissions. A preliminary iridectomy in a case of old iridocyclitis is most difficult to do satisfactorily; the iris is adherent to the lens and all one removes is its anterior layer with the pigment layer remaining on the lens. To get the entire thickness of the iris it is necessary to introduce a spatula between it and the lens and break up the adhesions; for this manipulation one needs as large a corneal section as is necessary for a cataract extraction. I always remove the lens at the same time, and my best results are in the cases in which the lens is delivered in the capsule.

Dr. Samuels (closing).—No doubt the good record of Dr. Alvis comes from his excellent practice of abandoning the intracapsular operation and resorting to simple extraction the moment he experiences difficulty in dislocating the lens.

The mishaps that may arise in attempting removal of a complicated cataract should be borne in mind.

RETINOBLASTOMA*

By JOHN F. TOWNSEND, M.D.
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A case of glioma of the retina in both eyes of a baby recently attracted nation wide attention.

Retinoblastomas are tumors of sufficient vital significance to be always of concern to the patients, if they rightly appreciate their bearing on vital statistics. The three cases here reported occurred in one family.

CASE REPORTS

Case 1.—Louise Gregory, colored, aged 18 months, was admitted to the Roper Hospital January 5, 1933. Her mother noticed that the right eye "looked funny" when the baby was 9 months old, or nine months previous to admission. Four days before admission she noticed that the baby began to rub the right eye; it seemed to be causing pain.

The right pupil was found to be dilated and did not react to light; there was no ocular redness, but the intra-ocular tension was increased. A diagnosis of retinoblastoma was made.

The right eye was enucleated on January 7, 1933. The pathological report was as follows: "a white tissue growth seems to be between retina and choroid. The growth is malignant, actually from and within the retina, which is lifted up from the choroid, composed of masses of round cells, mainly rosettes about blood vessels. There are some invasions of the origin of the optic nerve, much necrosis, and hemorrhage."

The child was seen in July, 1938, and there was no recurrence.

Case 2.—Lucille Milton, half sister of the patient described above, aged 18 months, was admitted to the hospital on November 6, 1934. The mother said that the child had had trouble with the right eye since she was 9 months of age, and had been slowly getting worse. The right pupil was found to be dilated and did not react to light. There was cloudiness behind the cornea and the iris was obliterated. The diagnosis was retinoblastoma.

The mother refused to permit enucleation and the child was discharged from the hospital. The mother continued to refuse operative treatment in spite of repeated warnings as to the certain outcome. The eye finally became painful and exophthalmic and bilateral metastases occurred in the bones of the face and the skull and in the brain and right ovary, as was shown by the postmortem histologic diagnosis. The child died of lobular pneumonia on May 30, 1935.

Case 3.—Josephine Milton, aged 2 years, sister of *Case 2,* was admitted to the Roper Hospital on February 17, 1938, with the diagnosis of retinoblastoma of the right eye. The mother had noticed that the "right eye was more prominent" than the left since the baby was a few weeks old, and that for the past two weeks

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the child had been rubbing that eye frequently. She said that the eyes crossed at times.

There was no increase in tension of the right eye and the pupillary reaction to light was less than in the left.

Enucleation of the right eye was done on February 19, 1938.

The pathologic report was: "Arising from the lateral inferior aspect of the nerve head and adjoining retina is a gray nodule 6 x 6 mm. elevated 3 mm. The cells show definite rosette arrangements."

On account of the involvement of the optic nerve, which was evident at the site of the excision of the nerve, fifteen x-ray treatments were given in the space of one month following the operation. So far (October 14, 1938) there has been no recurrence.

These case reports are of especial interest because the three cases occurred in children of the same mother, in successive pregnancies.

The paternal parent of the oldest was different.

There was a fatality in one because the mother refused treatment for her child at a time when any prospect of cure was possible.

POSTGRADUATE MEDICAL EDUCATION IN THE SOUTH AND THE CONTRIBUTION OF THE SOUTHERN MEDICAL ASSOCIATION*

By JOHN B. YOUMANS, M.D.
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Among the most pressing problems facing medicine today is that of postgraduate education. Because the function of the Southern Medical Association and the purpose of this meeting is almost entirely educational, it seems fitting to discuss some of the phases of this problem at this time.

The importance and urgency of this problem are reflected in the interest which is being displayed in it. At the present time no less than three extensive studies of the needs, methods and facilities for graduate and postgraduate training are in progress, one by the American Medical Association through its Council on Medical Education and Hospitals, one by the American College of Surgeons, and a third by the Commission on Graduate Medical Education. Besides these, this problem is the subject of a great deal of inquiry and study by state and local medical societies and other agencies.

The current interest in graduate and postgraduate medical education is due in part to the general concern with the whole problem of medical care. One of the fundamental factors in adequate medical service is a supply of physicians adequately trained in special fields. A second is continued education for all physicians that they may keep their knowledge and skill up to date.

In the past, responsibility for this has been left to a large extent in the hands of the individual physician. This individual responsibility for medical training after graduation has succeeded better in the field of specialization than in general practice, but with the growing complexity of medicine it has become necessary to assist the physician in order to improve the methods, standards and facilities for special training, as well as to establish a sound and comprehensive system for continuous postgraduate training in general practice. It should scarcely be necessary to add that the continued education of the specialist is necessary as well.

The training of specialists may be classed as graduate education. Great interest in this type of education has been aroused by the rise of the specialty boards and their demands for specialized training. Until now graduate training for the specialties has, for the most part, been given in hospitals by means of residencies without educational programs other than practical experience, with little if any control or direction by the school or university and with limited facilities for work in the medical sciences. The desirability of changing these methods, the way and extent to which they shall be changed, remain to be determined. Also, it may be well to consider the possible value of an additional year or so of special training beyond the general internship as a preparation for general practice.

However, although these problems of graduate education exist, they are less complex than the problems of postgraduate training for men in general practice. The educational and training requirements are more restricted and easily defined, the numbers involved are smaller, training can be more concentrated geographically, economic factors are less difficult and considerably more responsibility can be placed on the individual physician.

The problem of continuing education in general practice is much more difficult. Although

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continued education is necessary for the specialist, it is more easily accomplished than the initial training; the reverse is true for the general practitioner. The postgraduate training he needs is distinguished by the wide range of interest and the sharper distinction between the things he must know and the things he must know how to do. This is important because of the difference in teaching methods each of these requires. The broadness of his field and the limited time at his disposal at any period make it necessary that the training be almost continuous. It is more difficult to provide suitable courses specifically designed for his needs, particularly those giving practical experience. Isolation and the difficulty of leaving his practice make it necessary to bring part of this training to him. The economic difficulties are more serious and the individual physician requires more assistance and direction in securing this training. For a time at least it will be necessary to make up for past deficiencies if current teaching is to be effective and a permanent and continuous opportunity must be given if what is taught today is not lost tomorrow through lack of follow-up.

There can be no doubt of the desirability or need for such postgraduate training and it must be realized that it may become a requirement. Postgraduate training as a requisite for continued practice, a matter of discussion and debate today, tomorrow may be a legal necessity. Disregarding for the moment the advisability of such a requirement, it may be pointed out that it represents no fundamental change in the generally established and accepted control of practice by government. There is little essential difference between control of the right to enter practice and control of the right to continue practice. However, the requirement of postgraduate training for continued practice involves acceptance of some responsibility for providing the facilities for such training as has been the case in undergraduate education. The acceptance of such a responsibility is the background against which plans for adequate postgraduate training should be discussed.

The methods which can be employed for postgraduate training are courses at medical centers such as hospitals or medical schools, extension courses, library service, and medical society meetings. No one method is sufficient by itself and all must be used to secure the best results.

The longer course, 3 to 4 months at a medical center, should be the basic course, and should be taken at intervals of the equivalent of about every 5 years, though it may be advisable to break this up into month courses taken at shorter intervals. In any event, the courses must be continuous in the sense of being repeated over and over. These courses should be specifically designed to cover the entire field of general practice and should have a maximum of practical work with patients. Shorter courses at medical centers should be employed for presenting special topics and procedures and for review.

Extension courses are a very important method in this type of postgraduate training. They have been used widely and with considerable success. Rarely, if ever, however, have they been developed to their maximum usefulness. This has been due to a lack of continuity and permanence and a failure to provide courses planned to cover the range of general practice. This, of course, can be accomplished only over a series of years and therefore the plan should call for successive cycles of courses. For the best results the teaching should be done by paid instructors with experience in medical education, and particularly in this type of teaching.

Library service should not only be made available, but its use should be stimulated. In addition to the ordinary loan of books and journals, the service should include package service on specific topics, the securing of reference material, etc.

Medical societies, the local society in particular, have an opportunity to strengthen greatly their educational service to their members by careful arrangement of their programs, selection of speakers, the use of films, etc.

A basic feature of a satisfactory plan for postgraduate training is a central agency in a given area to correlate and direct the various activities which are to be employed, including those already in effect and those to be developed. It should be permanent and should provide a continuous and continuing program of postgraduate training. Although it might include in its program all forms of graduate and postgraduate education, its largest task would be to provide postgraduate training for general practitioners. It would be unnecessary and unwise for such an agency to provide and direct all the courses, facilities and activities itself. The facilities of private institutions and governmental agencies, as well as the very important activities of the profession itself, should be correlated and inte-

grated in a general and inclusive plan. Finally, such a central organization should be under the immediate direction and control of the medical profession, associated with schools and other proper agencies, and the individual physician should bear a reasonable proportion of the cost of this training.

With this general discussion of graduate and postgraduate education, let us examine the facilities available in the South. In general, it may be observed that the South has not only evinced a great interest in this problem, but is developing facilities and methods which compare favorably with other sections of the country in spite of certain drawbacks such as a lesser density of population and larger rural areas. Nevertheless, we must not let this progress blind us to the fact that such efforts still fall far short of what would be an adequate program of postgraduate education. Nowhere is such a program in effect and the fact that the Southern States are matching the efforts of other regions does not mean that the goal has been reached or even approached.

There are sixteen states in the territory of the Southern Medical Association. In these sixteen states there are twenty-nine medical schools, of which six are two-year schools only. Of the remaining twenty-three, five would probably be classed as Eastern rather than truly Southern. In only two universities with medical schools are there separate graduate schools of medicine, and in neither of these are courses given leading to higher or special degrees in the clinical branches, although in many of the schools connected with universities graduate work in the medical sciences is offered through the graduate school of the university.

Most of what should be graduate work, that is, training in special clinical fields, is accomplished through residencies. This, however, is usually carried on in hospitals and is not under any direction or control by a university department or school. In most cases the training is purely clinical and advanced work in the medical sciences is rarely possible except in those hospitals closely associated with medical schools. Even in them, the educational program is rarely organized and facilities are often lacking. Most of the work in the sciences is done in connection with research work by those who are planning a career in academic medicine. This statement is not meant to reflect on the value of such work, but only to emphasize the lack of opportunity for the man who wishes to prepare himself for practice in special fields.

The total number of residencies is difficult to determine accurately, but, excluding Maryland and Virginia, there are possibly about 270 annually, including those in the more restricted specialties. This number would probably be sufficient if all were of a satisfactory quality. The quality is even more difficult to determine, but it is certain that there is a great deal of unevenness. Probably few of them meet the standards which today are coming to be recognized as satisfactory for proper graduate training. In certain fields the number of opportunities seem to be very much limited. Allowance must, of course, be made for the fact that graduates from Southern schools can and do go elsewhere for graduate training, but also graduates from elsewhere come to the South.

Courses on clinical and related basic subjects of a year or more in length, available on the basis of fellowships or otherwise, and perhaps falling in the classification of graduate courses, are available in five schools or their associated hospitals. Most of these are in some special field, usually the more highly restricted specialties such as ophthalmology and orthopedic surgery. While it is difficult to determine the exact number of these, there are probably some 60 or 70 such places available. The number for which fellowships are provided is considerably smaller. It is probable that more opportunities for this type of training would be available if there were a greater demand. Lack of demand may be due in part to a lack of properly qualified candidates, but is more probably due to an inability to meet the cost of such training.

Postgraduate courses of 1 to 3 or 4 months' duration are offered in 8 of the 23 schools. Two are for colored physicians. Many of these are in individual subjects and there appears to be an insufficient number of general courses of this length specifically designed to cover the field of general practice, and available at a reasonable cost. In two cases the courses are aided or made possible by contributions from outside agencies.

Short courses of two days to two weeks are given at 14 schools and hospitals. Five of them are for colored physicians. Some of these are general in nature, others are in narrowly restricted subjects, such as diabetes and tuberculosis. In general, there seems to be considerable lack of continuity and permanence about

these courses and little evidence of planning to fit them in to a general scheme of postgraduate education.

Extension courses are given in eight states. They have been given in additional states in other years. They are usually under the auspices of medical societies, state or local. In some cases they receive outside assistance and there is an increasing tendency to develop these courses with the aid of Federal funds. These courses are generally popular and are becoming more so. The favorite subject is obstetrics, with pediatrics a close second. A few courses are given in special subjects such as syphilis. They also suffer from the lack of a permanent plan for continuous instruction specifically designed to cover the field of general practice, though such an idea seems to be developing and 6 or 7 of the 16 states appear to have set up a permanent organization for carrying on extension courses.

Medical libraries are maintained at all the medical schools. Some of them are large and of first rank. There are also fair libraries in some of the larger hospitals not connected with medical schools. Medical library service is provided by two states through their boards of health, one state medical society is developing a library and several state, county and city medical societies maintain or assist in maintaining libraries. The directory of the American Medical Association lists 66 medical libraries in the states of the Southern Medical Association, their volumes ranging from 450 to 396,000, with 30 of 10,000 or over. Thirty-five of these are separate from medical schools or universities. Nevertheless, there are large areas in the South distant from medical libraries and it is exactly in these regions that the smaller and less well equipped libraries are found. No library offers true package service and the individual loan of books is in many cases practically restricted to those residing near to the library. There is little effort to extend a wider and more complete library service to all physicians. In fact, this is to some extent not encouraged, not because of any disagreement as to the value of this service, but because the available funds do not permit the necessary expansion of plant and personnel and any increase in the present service further overloads a facility already overworked.

The impression gained from this incomplete survey of facilities for graduate and postgraduate training in the South is as follows:

(1) Inadequate opportunities exist for graduate training in the clinical field on a plane with graduate training in the preclinical sciences. Although a considerable amount of what might be called graduate training is accomplished by the residency system, educational facilities in addition to the practical training are poorly developed and inadequate. Also, there is a lack of opportunity for one to three years' training for those who are outside the succession of the resident services. It is possible, however, that this deficiency is more apparent than real and is the result of an insufficient demand from properly qualified candidates. The cost of such training is probably an important factor in this lack of demand.

(2) There is an insufficient number of well designed courses for practicing physicians giving one to four months' training in the general field. Again the lack of opportunity may be more the result of insufficient demand than the lack of actual facilities. To a considerable degree, however, the lack of demand may be in turn due to a failure to provide the proper type of course at a reasonable cost.

(3) Numerous short courses of a few days to two weeks are available. These, however, suffer from a lack of proper administrative direction, continuity of purpose and interest and proper content.

(4) Extension courses have proven useful and popular, but nowhere yet have been developed to their maximum usefulness, again due to the lack of a permanent plan and continuity of interest and support.

(5) There is too little library service available except to those living close to a library, and the facilities of the larger libraries reach a relatively small part of the total number of physicians.

Reference has already been made to the medical society meeting as a factor in postgraduate training. Besides the local and special societies, the regional or national society is an important factor. In the South, this place is occupied by the Southern Medical Association. As an educational force the Southern Medical Association has been of incalculable value to the South. Organized some thirty odd years ago, this association has grown until its members number over 7,000, and the number in attendance at its annual session reaches 3,000 physicians. With

19 sections, besides the general sessions, and with its technical and scientific exhibits, it gives instruction (in matters of general application) to every kind of physician, with the additional consideration of regional problems. It provides an opportunity for the physician living within its territory to present the results of his studies and investigations, stimulating him to further efforts. Through its programs pass the advances in medicine of the year past and before it appear many of those who are responsible for those advances.

To one who has a wide acquaintance with medical societies and who has followed with great interest the progress of the Southern Medical Association, the growth and development of this society in the quality of its programs and its exhibits, its membership and attendance, have caused a feeling of pride for a very valuable accomplishment.

IS REVISION OF THE MEDICAL CURRICULUM NEEDED TO MEET THE DEMANDS OF INDUSTRY?*

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Railroads were among the pioneers practicing industrial surgery. Therefore, it is believed the subject chosen is appropriate for this gathering. Some of us were trained in the art of curing disease; then came prevention of illness; now people are health-minded. The broad field of industrial medicine, practically unexplored, presents possibilities of great usefulness and embraces hygiene, medicine and surgery. The number of hazards connected with manufacturing processes is almost limitless, and as new chemical combinations are employed, unknown dangers peculiar to the substances used will present themselves. This aspect of industrial medicine affords a field of productive research.[1]

Industry concerns that part of humankind engaged in the production of raw materials, the fabrication of these into articles of commerce, and their distribution and sale. It follows that industry is an enormous factor in our daily lives; and those who essay to treat industrial workers should have a sympathetic understanding of their work and the environment in which they labor, and be trained in the risks of various occupations. Working conditions are an integral part of the process of living, and work is a most important part of life.[2] The human element is significant in the structure and operation of an industrial organization, and those who carry human destiny in their hands must have a clear conception of human needs.[3] On the ability of man to work and produce rests not only his welfare, but that of practically every person.

According to the United States Department of Labor 49,000,000 of our citizens are workers,[4] and the purpose of industrial medicine should be their adequate care. Not only have profound social changes marked the evolution of power-driven machinery, but the widespread use of chemicals, with their attendant injurious effects, make the conservation of the workers' health of paramount importance. In the early days, manpower was cheap, easily replaceable and human life was sacrificed to satisfy the childish whims of reigning princes. When Ferdinand Magellan began his voyage around the world a man's life was not of as much value as a small sack of pepper.

Industrial medicine has been practiced since the Fifteenth Century, and was made necessary by the advent of factories. Due to the development of these early industries, people congregated in villages and cities, and provisions for sanitation were so horrible that in the Sixteenth Century 50 per cent of the working population in England died before the age of twenty.[5]

"The scientific origin of industrial hygiene is usually dated from the publication of a treatise on diseases of occupation entitled 'De Morbis Artificium' in the year 1700 by Professor Bernardo Ramazzini, of the University of Padua."[6]

He recognized the need for proper environment and working conditions when he wrote:

"The same means which keep up the workers' life may be the means of grievous distempers."[7]

The practice of surgery of today had its beginning in accident surgery: recoveries occurring following injuries to body cavities and their contained organs, the results of nature and art, proved their accessibility to surgery for diseased conditions.

Industrial accidents cost one billion dollars annually. The wounds of approximately 250,000 (10 per cent of the injured) become infected, and the additional expense therefrom is $104,227,500, with 450,000 weeks of disablement. The prevention of these infections can, to a de-

*Chairman's Address, Section on Railway Surgery, Southern Medical Association, Thirty-Second Annual Meeting, Oklahoma City, Oklahoma, November 15-18, 1938.

gree, be controlled by having a well organized medical service available. Dr. Carey P. McCord estimates that the prevention of infection will reduce lost time by one-third.[8]

Due to the interaction of social, economic and labor problems, workmen's compensation laws were enacted. The history of this legislation is interesting, and it is to our advantage to study these laws and the changes that are being made. Unfortunately, uniformity is lacking. In some industrial plants the establishment of engineering and medical departments followed the passage of compensation laws. Industry has adopted the physician, not because of altruism, but because the practice of preventive medicine is sound business and the factory which has once established a health department has never been known to give it up.[9] This interest of the employer is gratifying, but should not displace a desire on our part for such a broadening of knowledge that we will be better fitted to meet the increasing demands of modern industrial practice.[10]

In the past, the medical profession has been content to limit its activities in industry to a purely reparative type of service; but the multiplicity and complexity of manufacturing processes, and the awakening social consciousness, demand more. It is not sufficient for the industrial physician to know the hazards of occupation and treat illness and injuries as they occur. They must be anticipated and recommendations made for their prevention. This should require about 90 per cent of the physician's time; the reparative and curative duties will probably not exceed the remaining 10 per cent.[11] [12] A physician who is well conversant with industrial medicine is informed in his profession, and should actually practice the highest form of medicine, namely, prevention of disease and accidents. Physical examinations; diagnosis and treatment of illness; plant inspections; control of sanitation; publicity on health matters; proper food, clothing and housing; general working environment; psychology, and replacements have all become parts of his duties. Question might be raised as to the part psychology plays in industry: under compensation legislation, the injured employee has developed a mental outlook peculiarly his own, and it is necessary to treat not only the injured part, but the mental apparatus which governs it.[13] [14] Also the work assigned an employee should fit his mental as well as physical equipment.

Is organized medicine functioning to meet the demands of modern industry?[8] Up to the present, progress in industrial medicine has proceeded in industrial plants, a few laboratories, where medical investigators, hygienists and safety engineers have labored and in too few of our medical schools. If the real needs of industry and industrial workers are to be met, medical men who are interested in such activities must be trained. It is not the business of industry to educate an industrial medical personnel, but the prerogative of medicine. However, unless we bestir ourselves, industrialists may deem it to their interest to do so. The National Industrial Conference Board has defined an industrial physician as

"one who applies the principles of modern medicine and surgery to industrial workers, sick or well, supplementing the remedial agencies of medicine by the sound application of hygiene, sanitation and accident prevention, and who, in addition, has a cooperative appreciation of the social, economic and administrative problems and responsibilities of industry in its relation to society."[6]

There are medical organizations and sections of medical associations interested in this phase of professional work. Harvard University, in 1918 was the first institution in the world to inaugurate a course in research and instruction leading to degrees in industrial medicine.[6] From correspondence with those who should know, it is believed that our medical schools *are not* giving sufficient attention to instruction in a field of work involving possibilities of injury to an estimated 37.5 per cent of our population.[15] [16]

The ramifications of present day industrial practice are such that a broad general knowledge of industrial processes is necessary. In the University of Birmingham, England, instruction is divided into: (1) undergraduate study and demonstrations; (2) lectures to general practitioners, especially those engaged in industry; and (3) lectures to medical societies.[7] This would seem an admirable outline, for it means instruction of oncoming physicians and an opportunity for those in practice to avail themselves of developments in this field. The course of study given in this field at Cornell University Medical College is said to be "fairly typical" of the advantages afforded in this country; it is both theoretical and practical.[17] Unfortunately, far too few of our medical schools pay direct attention to industrial medicine. It seems to the writer that too much stress has been and is being placed on postgraduate study as the type of instruction most desirable. General practi-

tioners do a large part of this work, and should be trained before graduation. It is generally agreed it is not necessary to educate physicians in a new specialty: medical educators should interest themselves in providing prospective physicians with the sound principles which underly industrial practice.

There is no department of a medical school which could not be used for the purpose in hand. The teaching of toxicology, internal and legal medicine, and dermatology as they pertain to industry are outstanding. Without enlarging the teaching personnel, but with cooperation between departments and economy of time, it is believed our schools could give instruction to the end that the average graduate would be better able to cope with the requirements of modern industrial medicine.

"It is the responsibility of organized medicine to make available to the ill and injured in industry medical and surgical service of the most efficient type. The training for such service should begin in medical schools. Medical students are taught a great deal about bacteriological diseases, but very little about sanitation, industrial poisoning, or occupational diseases in general. Similarly, medical graduates should be adequately trained in surgery before attempting to treat the seriously injured."[10]

The hope is expressed that your interest and enthusiasm may be aroused in this subject.

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LOOKING FORWARD*

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It is with pride that we refer to those medical heroes of the past, who by their unselfish motive and personal sacrifice have given to us the fundamentals of our present-day preventive medical program. It is with equal enthusiasm that we plan the programs of our respective domains to utilize the principles that these pioneers developed and which we, in keeping with accepted and ethical administrative and technical practice, are attempting to translate into understandable scientific information and application. We are living in a period in which the protection of our vital and physical resources is becoming one of the recognized responsibilities of official governmental agencies. Two words, *conservation* and *coordination*, stand out in present day discussions and plans for the protection of our local, state and national health. Thus it behooves us, if we are to become leaders in the future, to look forward, using the experience of others and our own creative thinking and planning in preparing to assume those responsibilities that are to be ours.

It does not require any great amount of study to find that we have at our disposal latent energy and personal ambition among all medical and public health groups, correct scientific information, precise and efficient control measures and other undeveloped resources that should be brought into play against Public Enemy Number 1, that racketeer, preventable disease, which continues to take its toll of vital and physical resources as a result of our failure to put to work and keep at work on a full-time basis the recognized and effectual control measures that are at our disposal. These conservation measures are of known value and reasonably simple in their application, if we consider the human equation element; yet, we find some of today's machinery, the best in history, rusting and breaking down as a result of sporadic, ineffectual use and in some instances, political misuse. We can never expect our resource-saving program of good health to balance the scales against our resource-taking problem of preventable disease, that we knowingly and un-

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wittingly contribute to, until we as individuals and as a group seriously practice the coordination and conservation measures that we preach. There is still too much talk and too little action.

The hidden tax drain on our economic resources is appalling. The human race has been paying increasing interest and principal installments in misery, illness and death since we became obligated for the initial installment to the preventable disease collector as a result of Mother Eve's insatiable appetite for the forbidden fruit. What does this collector have to say for himself? Study his statement which was recently printed* under the heading, "A Confession."

"I am a destroyer. I have paralyzed progress and checked civilization. Royalty has withered at my touch; peasantry has perished at my command. Oftimes my footsteps are stealthy; my breath is poison. I carry anguish as my offering; suffering is my current award.

"The world has been the theater of my action. Multitudes have quailed at my approach; bannered armies have disappeared at my decree. I am relentless; my heart is stone. I am cruel; I have crippled defenseless children; I have slain innocent babes.

"Where I dwell the smile of happiness is unknown. Grief is my companion; I draw my dividends from distress. Sorrow and pain minister to my gladness; death is my final goal.

"Though terrible in my devastation, I am not invincible. Ignorance provides me with victims; poverty contributes to my success. Superstition is my co-laborer; carelessness is the basis of my hope. Dominant in the darkened Past, I am yielding to the advancing Present; I will vanish in the enlightened Future of *applied* Science and Truth.

"I AM PREVENTABLE DISEASE."

And thus we have our challenge in looking forward to "Prevention through Education," which should become our lullaby for the living and unborn. The lack of preventive education is the requiem for those who have died and who will die needlessly.

We boast of the services we have rendered; the figures on our reports reach stupendous totals. We talk in comparative appraisal score points as a result of having attained minimum numerical standards that speak too often in quantitative instead of qualitative terms. Regardless of the numerical standards that may be set for administrative guidance, the success or failure of our work will be determined by the morbidity and mortality figures that only Time can write. We are successful in our program only to the extent that we are able to get our people to begin thinking and doing for themselves. We may expect their continued lethargic response until our methods and objectives are translated into understandable terms and action. The general public is beginning to realize that much illness is preventable and that the price paid in hidden taxes for the lack of preventive medical service is greater for one or more diseases than the entire appropriation for all public health services. Tuberculosis in Tennessee is a perfect example of this. For instance, on a basis of $150 per person, it costs more per year to bury Tennessee residents who die of tuberculosis alone, than the state appropriation for all public health activities.

Age groups, environment, occupation, race and geographical location contribute to our specific health and medical hazards. The doctor, the nurse, the sanitarian, the teacher and the American citizen must be taught what these hazards are. They must be taught how they can be successfully combated. The state and local health departments must assume more responsibility for promoting interest in and providing facilities for health teaching. There is no better way to teach the physician, medical student and student nurse the principles of public health practice than to provide facilities for demonstrating the value and use of morbidity and mortality statistics reports and the various measures employed in preventing preventable diseases. Objective teaching sticks and must not be discarded in our enthusiastic subjective educational attempts. We may reasonably expect our state and local health services to attract young men and women who are competent and interested in a career service if we will only give them an opportunity to learn something of our work. The state and selected local health departments of every state should be available for demonstration teaching (objective teaching) by every medical and nursing school within the boundaries of the respective states. Even if the graduates do not enter the public health field, the time spent has not been in vain, because many of them will go their separate ways, spreading the philosophy of public health. And of equal importance—the state and local staffs become more efficient, for in teaching others they themselves learn and keep up-to-date in their thinking and practice.

The departments of health and education must work together in formulating plans to teach teachers to teach health — the depart-

*From October 15, 1938, issue of *Health Briefs* (Tennessee Department of Public Health).

ment of health passing on the scientific accuracy and soundness of the materials to be used, the department of education, through its teacher training institutions, developing materials and methods for use in the various grade levels of our elementary and high schools.

Pneumonia control offers one of the greatest life-saving opportunities in the field of public health. Anti-pneumonia serum, when administered under carefully controlled conditions, reduces the case fatality rates in certain types approximately 50 per cent. Perhaps many more lives would be saved and a more beneficial publice service rendered if the money now spent on rabies control and rabies vaccine were utilized in the treatment of carefully selected pneumonia cases. Rabies can be effectively controlled by control of the stray domestic animal population. The time is not far distant when pneumonia serum will be as freely available as typhoid vaccine; then we shall expect to see the pneumonia mortality rate come tumbling down.

Tuberculosis, another of the captains of the men of death, still exists as a major public health problem. We still know too little of the epidemiology of this disease, which theoretically should be eliminated in two generations, but which actually will remain a major public health problem as long as we have poverty and ignorance in our midst. It is believed that a concerted effort to find active tuberculosis in the high school age group would be far more productive and economical from the standpoint of time and money than some of the ill-advised and unprofitable wholesale tuberculin testing measures now employed in many school health programs. We must not lose sight of the fact that a positive tuberculin in an infant or young preschool child is of serious concern to the family. The younger the child, the greater the possibility of active tuberculosis in the family and the more serious the situation for the child. The provision of early diagnostic service, collapse therapy facilities and more general public knowledge regarding the spread and control of tuberculosis should be our immediate objectives in tuberculosis control. The sputum positive cases must be controlled.

Industrial hygiene is a virgin field. We know little, except in a few selected areas, of the environmental conditions under which industrial groups now work. It behooves us to take inventory and develop a program designed to protect employer and employee alike.

Mental disease has many preventable aspects that should be carefully investigated with the idea of instituting a more comprehensive program of instruction among the medical and teacher groups in the recognition of some of the more common prodromal symptoms and signs of frank mental disease. The environmental and hereditary conditions that contribute to these problems must be carefully sought and corrected, if possible. We cannot expect a decline in the number of admissions to mental hospitals until we have provided some means for prevention of mental disease at its source. Syphilis control, sterilization of certain types of mental cases, and more attention to curative instead of custodial care of mental cases, along with special training for the potential mental cases, offer the most productive possibilities for reducing the present day population of mental institutions.

Cancer and heart disease are subject to some degree of control. The former can be cured if the public is taught to recognize the early symptoms and seek competent medical care; the latter can be reduced by observance of some of the common-sense principles of everyday living, instead of continuing to burn the candle at both ends and still expect to live the allotted three score and ten years.

State and local health services are still on a somewhat insecure financial basis in many areas. No single thing will do more to stabilize public health personnel and programs than the enactment of legislation for state and local application, setting out the specific conditions under which a specified minimum amount of money is made available for public health purposes. Legislation of this nature is needed worse now than ever before.

A public sick of much preventable and uncared for illness and having some knowledge of its needs and the strong will to pursue them has put in a call to the medical profession for medical service. Today we are laying the foundation for the structure that is to come. The provision of medical care, curative and preventive, is not a complete answer to the complaint that has been made. Our medical and other needs change as society changes and are determined by the social and economic welfare of the individual, family, community, state and nation. Strong administrative organization is needed. If we are to assume responsibility for the program, we must be in position to formulate and put into effect, in cooperation with the organized medical profession, a satisfactory and

workable program. We must begin building the administrative facilities to carry it out. The solution of the problem is uncertain, but as we pass from this era of known problems to an unknown, but an era of opportunity, we must continue an open-minded study of present and possible programs, using the knowledge gained as bases of discussion and constructive planning and not as unchangeable blue prints of procedure. Today's uncertainty must be replaced by a united effort for constructive planning. Confidence must be substituted for misunderstanding; reason must replace prejudice; integrity and good faith must abound instead of distrust; and order and service must prevail in lieu of chaos and need, if the structure we build is to meet the needs of man. Ours must be an intelligent effort to put medical science to work.

In conclusion, may I add, the public will be only as enthusiastic about us as we are about our work.

THE RELATIONSHIP OF OBSTRUCTIVE LESIONS TO RESISTANT URINARY INFECTIONS*

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The relationship of infection and poor drainage from cavities such as the sinuses, middle ear, abscesses at the roots of teeth, pulmonary abscesses, and infections of the gallbladder is well recognized. Infection in such areas is often resistant to treatment, not because of the type of the infecting organism or because of the failure of immunizing agencies or because of the lack of germicidal value of the remedies used, but because of inadequate drainage. If these cavities had free drainage, ordinary infections would be not only of less frequent occurrence, but easier to cure. Undoubtedly a higher development of immunizing agencies is required to exterminate infection from such protected foci than is required for cure of infection not so protected.

Drainage of abscess cavities, to allow them to heal from the bottom, is generally recognized as a sound surgical principle.

While knowledge of these facts is being used daily in the treatment of infection pocketed in such cavities, the relationship of obstructive lesions to chronic or recurring infections of the urinary tract is frequently neglected.

Obstructions and infections constitute the great majority of urinary disorders in both sexes from babyhood to old age.

The obstructions are usually of congenital origin in children, while those predominant in the elderly are acquired or incident to advancing age.

The causative relationship of obstructions to chronic infections is too obvious to discuss if it were not so constantly overlooked. Obstructions near the kidney are especially likely to be unsuspected in children, and prostatic obstruction is often attributed to general weakness of advancing age.

It may be asserted without fear of contradiction that nearly all chronic or recurring urinary infection is associated with an obstructive lesion or a protected pocket which harbors the infection and hinders its eradication. Are these hindering factors merely incidental or do they play a primary part in causing the infection to become localized and persistent?

With this particular problem in mind, many observations over a period of many years have been made and we are convinced that obstructive lesions are primarily the cause of the great majority of chronic infections of the bladder and renal pelvis. Whether the infection has reached these areas by ascending from the lower genital organs or by way of the blood or lymph streams will not be discussed. It is clearly evident that the ordinary non-specific infection which causes pyelitis and cystitis, chronic in character, rarely sets up these inflammations unless assisted by stasis caused by obstruction. Proof of this statement is afforded by the disappearance of the infection, in the majority of instances, after the obstruction has been relieved.

We have been unable to find an instance where a distant focus of infection acted as a persistant "feeder" without being able also to find evidence of obstruction or a pocketed area which was affording a vulnerable point to which the infection was fed. This statement, however, in no way is intended to mean that distant foci of infection should not be corrected, but rather

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that the lesions which provide the fertile soil should not be disregarded as prime causative factors, whether the infection is ascending or descending in origin.

While it is important to think of the source of the infection, it is even more important to think of the cause of its persistence.

The failure of the average infection in the bladder or renal pelvis to respond to nature's defensive agencies and to reasonable courses of urinary antiseptics always should suggest the presence of obstructions and the urinary stasis they induce.

A few years ago we were asked by a medical society to present a paper upon the thing which had impressed us the most in many years of work in the treatment of genito-urinary diseases. After thinking over numerous subjects for two months we chose "The Importance of Recognizing Obstructions as the Cause of Persistent or Recurrent Infections." This concept, although long and constantly in use in daily practice, had not hitherto impressed us forcibly. When we began to test it out, however, in prognosis and treatment, we became more and more convinced of its fundamental soundness, not alone in the treatment of chronic pyelitis and cystitis, but also in urethritis, prostatitis and seminal vesiculitis. It applies with equal force to obstructions and pocketed areas all the way from the meatus of the urethra to the topmost calyx of the kidney.

Our older textbooks contain many worthless pages on astringent injections for the treatment of non-specific urethritis, with often little or nothing concerning its primary and commonest causes, urethral stricture, a small meatus, or both. For many years now in our own work, astringent injections for such discharges have been abandoned. Instead, the meatus is incised if subnormal in size, and urethral strictures are dilated.

Chronic prostatitis may act as a cause of a non-specific discharge, but it itself often is associated with or caused by urethral strictures.

Stricture of the urethra in women likewise is the most frequent of all causes of chronic cystitis and cystitis-like symptoms. In men, such affections usually are attributed fairly promptly to urethral and prostatic obstructions or infections; yet in women and children urethral obstructions are constantly neglected, in spite of their being the most frequent cause of cystitis and bed-wetting. Chronic cystitis in women is too often treated with a series of irrigations of the bladder and numerous rounds of urinary antiseptics before the benefit of urethral dilatation is suggested.

What has been said of chronic urethritis and chronic cystitis applies with equal force to pyelitis. Residual urine in the renal pelvis is just as provocative of pyelitis as residual urine in the bladder is of cystitis. These obstructions in the ureter may be due to an anomalous blood vessel near the kidney or to a ureteral stricture or to other causes.

One of the frequent mistakes in medicine is the diagnosis of urinary infection in children merely as "pyelitis." Such a diagnosis, when the infection is chronic or recurrent, falls far short of actual needs. Pyelitis all too frequently is only a symptom of an obstruction in the ureter or at the vesical neck. Stagnant urine in the bladder or renal pelves and the obstruction causing it are far more important to recognize and treat than is the chronic infection.

Before the advent of small cystoscopes, designed for babies and children, there were adequate reasons for failures of diagnosis of these lesions. Such reasons now are no longer valid. Babies and children usually tolerate cystoscopic procedures as well or better than adults. The diagnostic problems to solve are largely the same in both groups, with obstructions heading the list.

Concerning uropathies in children, Bandler has recently made the following statement:

> "The triad of obstruction, stasis and infection presents one of the most serious hazards with which its victim, and the physician as well, have to cope."

The symptoms of such conditions are often misleading and Bandler further says:

> "We have been impressed with the frequency with which gastro-intestinal symptoms occur in the presence of upper urinary tract pathology. This is especially true of children, and several instances come to mind of persistent medical and surgical treatment for pylorospasm, enteritis, appendicitis, colitis or constipation when the pathology lay in the urinary tract. Nausea, vomiting, obstipation, malnutrition, or intermittent abdominal colic feature such case studies. Later, and often too late, is a large hydronephrosis disclosed."

The management of far advanced hydronephroses seen in early life, unless the obstruction is at the vesical neck or anterior to it, may present great difficulties. Many of the less gross lesions, however, with chronic or recurrent urinary infection and gastro-intestinal symptoms, are readily responsive to treatment after a correct diagnosis has been made and appropri-

ate measures have been employed to correct the causative obstructive lesions.

There are no essential differences in the diagnosis and treatment of many of the genito-urinary diseases of adults and children; yet in the latter nearly all of the non-specific infections unfortunately are diagnosed as "pyelitis," regardless of the type of the pathologic lesions hindering the cure or causing recurrences and other seemingly unrelated symptoms.

The commonest obstructions in children are at the vesical neck and deep urethra. They may be congenital narrowings or valvular formations; if of the valve type there may be no obstruction to the passage of instruments such as sounds or cystoscope and yet the obstruction may greatly hinder the flow of urine.

Such obstructions in children, even when mild and unnoticed, undoubtedly predispose to serious trouble later in life, especially when they are complicated by acute or chronic inflammations. In an uncommon degree is trouble likely to arise during pregnancy.

Kinks in the ureter usually are the result of obstruction or ptosis and are not themselves barriers to the passage of urine. They are mainly significant when the ureter is dilated down to the kink, with its caliber normal or small below. In such instances it usually means that there is an obstruction, mural or extramural, at this point.

From a recent urographic study of sixty consecutive unselected normal pregnancies, Woodruff and Milbert* conclude that most pregnant women with no previous obstructive lesions will go through the period of gestation uneventfully, while those who do experience difficulty have had an obstruction which antedated gestation.

Prather, discussing the papers of Woodruff and Milbert,* says that he does not believe that high powered urinary antiseptics of the present day should be administered to the patient with long-standing urinary symptoms unless the physician has satisfied himself that there is no pathologic change destined slowly to impair the patient's renal function.

If persisting infection were the only part of the trouble, symptoms might not be bad. Many times worse than chronic infection, is the back pressure damage to the kidneys. This unfortunately often continues after infection in urine has disappeared, and not infrequently before the obstruction is recognized, hydronephrosis may be present and renal function may be seriously and often permanently impaired.

Generally speaking, the higher the obstruction in the urinary tract the more likely is the disorder to be unsuspected.

The symptoms may be seemingly unimportant, yet the hydronephrosis may be progressively destructive of renal function. Continued back pressure, dilatation of the ureter and renal pelvis with ultimate destruction of the excreting substance of the kidney are inevitable consequences of marked obstruction.

The primary problem in dealing with chronic or recurring urinary infection is to provide free drainage. It is largely a plumbing job.

Control of infection is secondary and usually varies with the adequacy of urinary drainage. Remarkable improvement of renal function often returns after relief of obstructive lesions.

Unfortunately, the better the urinary antiseptics the more probable is late damage to the kidneys.

Everyone knows the importance of keeping the sewer pipes of a house draining properly, yet disturbances such as a weak urinary stream and undue frequency in voiding are often neglected. Excuses such as age, habits, nervousness and unusual intake of fluids are likely to be accepted as the causes of the abnormalities.

Not infrequently, in both men and women, dread of a painful examination results in the neglect of important symptoms; yet valuable facts may be ascertained by an orderly study of the history and very informative tests may be made without pain. For instance, after urinalysis and a physical examination, including rectal or vaginal palpation, if 1 c. c. of phenolsulphonthalein is given intravenously and 25 or 30 per cent is present in the urine voided 15 minutes later, satisfactory evidence is obtained that certainly one kidney and probably both have normal function. Furthermore, the prompt appearance of this amount of the dye affords adequate proof that there is little if any residual urine in the kidney pelves or bladder. Such evidence is of great assistance in deciding upon the next diagnostic step or upon the justification of the use of urinary antiseptics, at least for a time, until the need of further study becomes evident. When little or no dye is present in the urine, further study becomes necessary to determine if the kidneys are to

*Woodruff, Stanley R.; and Milbert, Arthur H.: Roentgenographic Studies of the Urinary Tract During and After Pregnancy. J.A.M.A., **111**:— (Oct. 29) 1938.

blame for slow excretion of the dye or whether obstruction has delayed its passage.

Important information may also be gained without pain by a study of x-ray films made after an opaque medium has been given intravenously. At least one film should be made with the patient in an upright or nearly upright position. Such films are much more difficult to interpret than are retrograde pyelograms, but often they give a lead as to what should be the next step in the diagnosis.

Not infrequently by these means a correct diagnosis is attainable without the use of any painful procedure. Even when doubt still exists, further study with cystoscopic measures is made more definite because of the facts already ascertained.

Intravenous pyelograms cannot be depended upon for such exact diagnosis as can retrograde ones, but they often afford valuable suggestions and assist in arriving at a diagnosis in a logical, orderly manner, with the minimum of disturbing reactions such as might follow repeated cystoscopies and ureteral catheterizations.

Improvement in equipment, urinary antiseptics, anesthetics and technical skill now available make these procedures far less objectionable than was the case during the developmental period of this work.

Chronic or recurrent urinary infection in children often may be cleared up by urinary antiseptics and yet, if tests are not made to determine whether or not obstructions with residual urine are present, permanent damage in later years may be the price of neglect. It should be no surprise when the little girls who have had persistent or recurrent urinary infection are found, in later years, to have hydronephrosis, pyelitis of pregnancy, or calculi.

Urology in children differs very little from urology of adults, except in one particular, namely: that there is more frequent prolonged neglect of correct diagnoses.

Sulfanilamide, in spite of its numerous minor disturbing reactions, and a few major ones, is our most useful urinary antiseptic. Success with it in cystitis and pyelitis is the rule if the kidney function is good. Its success, though, usually varies directly with the patency of the urinary passage-ways. Sometimes satisfactory results are obtained in spite of residual urine in the bladder or renal pelves, but such improvement is likely to be temporary or, as already stated, may be followed later by serious back pressure damage to the kidneys.

Time does not permit, nor is it the purpose of this paper, to discuss the use of urinary antiseptics. The point we are trying to make and to emphasize is that no matter how good the antiseptics are, adequate urinary passage-ways are much more important.

Finally, let us urge that chronic urinary infections be treated with a clear-cut mental picture of the likelihood that their primary cause is an obstructive lesion; and that hydronephrosis, with poor kidney function, recurrent infections, and possibly the development of urinary calculi, may be the price paid for failure to recognize these obstructions as the commonest causes of chronic non-specific urinary infections.

Southern Medical Journal

JOURNAL OF THE

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EDITORIAL DEPARTMENT

SOUTHERN MEDICAL ASSOCIATION
Thirty-Third Annual Meeting
Memphis, Tennessee, November 21-24, 1939

WALTER EDWARD VEST

PRESIDENT OF THE SOUTHERN MEDICAL ASSOCIATION

An exceedingly modest man is the recently elected President of the Southern Medical Association, so modest that it has been difficult to obtain information about him for this brief sketch.

He is a Virginian, born in Floyd County, in 1882, the son of William Madison and Mary Susan (Boone) Vest. He was graduated from William and Mary College in 1902, where he won a Phi Beta Kappa key. He taught German at William and Mary for two years after graduation, and has been sufficiently interested in his Alma Mater since then to work actively in its alumni association, of which he was president in 1927. In 1936 the alumni medallion was conferred upon him for his service to the alumni association.

He completed a four-year course at the Medical College of Virginia in three years, and was a member of the Phi Beta Pi there. He took his M.D. degree in 1909. After a period of internship and postgraduate study in Richmond and New York, he began a general practice in Meherrin, Virginia. In 1915 he moved to Huntington, West Virginia, and specializes there in internal medicine. He was president of the General Alumni Association of the Medical College of Virginia in 1931.

He was married in 1910 to Miss Saddie Blankinship, of Brookneal, Virginia, and they have a son, Walter, Jr., now following in his father's footsteps as a student in the Medical College of Virginia.

During the World War, Dr. Vest was Chief of the Medical Service at the base hospital at Camp Wadsworth, South Carolina, where he was highly regarded and is affectionately remembered by his associates.

Dr. Vest is a member of the American Therapeutic Society and a Fellow of the American College of Physicians, now representing West Virginia on the Board of Governors of that organization. He is President of the Public Health Council (Medical Examining Board) of West Virginia and has been for several years a member of the House of Delegates of the American Medical Association. He is now serving as a member of the Committee of Seven of the American Medical Association, to meet with representatives of the Federal Government to consider a health program for the United States.

In West Virginia he has worked tirelessly for organized medicine. He has been president of the county and state medical societies, of the Chesapeake and Ohio Surgeons' Association, and associate editor, and editor, of the *West Virginia Medical Journal*, one of the best and most widely read of the state periodicals. He is affiliated with the Methodist Church, the Masonic Order, the Kiwanis Club, and is a democrat.

The Southern Medical Association has been fortunate in having his enthusiastic support since 1913. He became a member of its Council in 1925 and Chairman in 1929, in which position he served for two years. He has also been Chairman of the Section on Gastroenterology, and has made valuable contributions to the JOURNAL.[1]

The new President does not drink or play cards, and is not even a golfer. According to

1. Vest, Walter E.: The Future of Railway Medicine and Surgery. Sou. Med. Jour., **11**:796-797, 1918. Anginoid Symptoms of Gallbladder Disease: A Survey of the Literature. **27**:410-413, 1934. Gastro-Intestinal Symptoms of Kidney Disease. **29**:696-698, 1936.

his intimates, his chief diversion is medical reading. Organized medicine, like many of the world's great governments, is now under stress from many quarters. It needs in prominent positions men of ability, ideals and clean life, whose characters are, like Dr. Vest's, a guarantee of capable and unselfish leadership of which future generations will be proud. The Association is peculiarly fortunate in its new President.

ANEMIA IN PREGNANCY

Since hemoglobin regulates oxidation, and oxidation is an essential and continuous process for each living cell, hemoglobin should be considered the dominating tissue of the body. The hemoglobin content of the blood may be altered by a variety of dietary errors, as well as by trauma. Anemia is common in the adult population, and in particular, figures from many sources on the frequency of anemia in pregnancy are appalling. Much good work is being done to investigate the extent and to learn something of the causes.[1] [2] Yet practitioners have assumed rather a fatalistic attitude and there is among clinicians a distressing current resignation to the occurrence of severe anemia in pregnancy. It is engendered by the fact that therapeutic measures often fail to relieve it; women for the most part survive, even with a very low hemoglobin and red count; and they usually improve after delivery, though they probably frequently show complications.

Recent papers in the *American Journal of Diseases of Children* deal with the effects of pregnancy in several types of human and animal dietary deficiency, and they serve somewhat further to elucidate the subject. It is shown that pregnancy may act as a sensitizing agent, bringing out the defects of a ration more quickly than they could otherwise be apparent. A series of rats on a low iron diet, consisting of nothing but whole milk powder, were carried through two pregnancies.[3] The first did not lower the blood count, but did cause marked depletion of liver iron. The second pregnancy resulted in a moderate anemia of the mother. The offspring of the first litter had normal hemoglobin values at birth, but their total iron content was greatly reduced. It was only one-fourth or one-fifth of the normal. The rats of the second litter had severe iron deficiency and many died within one or two days after birth. They rarely survived longer than ten to twelve days. Under these conditions, the mother apparently retained the common iron supply at the expense of the fetus. The offspring was unable to secure all the iron.

Anemia of another type may be induced by vitamin C deficiency. The content of this accessory food factor in the human mother's blood and urine has been compared with that in the fetus. According to Boston workers,[4] the maternal blood may be very much lower in ascorbic acid than the cord blood of the infant. So long as there is any ascorbic acid in the mother's blood the fetus takes what is needs, irrespective of maternal requirement. The ascorbic acid of the mother's blood tends to decrease as pregnancy advances. Not infrequently, in hyperemesis gravidarum the quantity detected came within the range of clinical scurvy.

Ascorbic acid in human milk could be greatly increased by raising the allowance for the mother.[5] The quantity in milk was usually greater than that of the mother's blood, showing that vitamin C was actually secreted from the blood into the milk. Breast milk of women who sold their excess was low in ascorbic acid. The investigators concluded that there is an unusual requirement for vitamin C in both pregnancy and lactation. In both pregnancy and lactation the need of the infant took precedence over that of the mother and the child was able to acquire an adequate quantity of C at the expense of a mother whose diet was deficient. This is in contrast with iron deficiency. The mother apparently retains iron though the fetus has not enough for survival.

Chappell and Bivings,[1] in a study of pregnancy in negro women in Atlanta, concluded that their usual ration was low in vitamins A, C and D. Their patients obtained some improvement of the usual anemia by administration of cod liver oil; none from iron and liver extract.

Vitamin B_1[6] aids in assimilation of iron and the B group is important in gestation. Pellagra has been considered to be a B deficiency disease. Anemia is common in pellagra, and pellagra is relieved or prevented by nicotinic acid. The pellagra-producing diet is popular in the South,

1. Chappell, Amey; and Bivings, Lee: Anemia and Pregnancy: A Three-Year Study on Negro Women. Sou. Med. Jour., **31**: 876 (Aug.) 1938.

2. Eskridge, J. S.; and Serwer, M. J.: Blood Studies in Private Obstetrical Patients. One Thousand Cases. Ibid, this issue, p. 24.

3. Alt, H. L.: Iron Deficiency in Pregnant Rats: Its Effect on the Young. Amer. Jour. Dis. Child., **56**:975 (Nov.) 1938.

4. Teel, H. M.; Burke, B. S.; and Draper, R.: Vitamin C in Human Pregnancy and Lactation. Ibid, p. 1004.

5. Ingalls, T. H.; Draper, R.; and Teel, H. M.: Ibid, p. 1011.

6. Summerfeldt, P.; and Ross, J. R.: Value of an Increased Supply of Vitamin B_1 and Iron in the Diet of Children. Ibid, p. 985.

and study of the effect of the pellagra preventive, nicotinic acid, on pregnancy in this section of the country should be of interest. Since pellagrins commonly show porphyrin-like substances in the urine,[1] tests for porphyrinuria in a series of pregnancies in pellagrous districts might be informative.

The fact that the hemoglobin responds slowly to therapy in pregnancy should not discourage medical effort, but should stimulate it. The most promising leads would still seem to be dietary. Numerous clinical tests for dietary deficiency are now available which should eliminate some of the guesswork which has been necessary in the past as to dietary needs. Night blindness can indicate a lack of vitamin A; vitamin C may be quantitatively estimated in blood and urine; the presence of porphyrin is possibly indicative of a need of nicotinic acid. Study of habitual dietaries and correlation of these with some of the tests for vitamin and mineral deficiency would provide valuable information for the obstetrician.

GLEANINGS FROM RECENT JOURNALS

Effect of Radiation on the Brain.—Treatment of brain tumors with x-ray is becoming increasingly popular and at times may give very beneficial results.[2] X-ray of the pituitary gland for various types of endocrine disorder is being tried. The late effect of radiation on brain tissue is still to be studied.

Scholz, of Munich, and Hsu,[3] of Peiping, China, have made a contribution to the subject by radiation of the brains of three hopeless schizophrenics who died two or three years after, without having shown signs of injury. The exposure was made through 6 portals, giving about 400 per cent of the skin erythema dose in three days. The mental picture in life remained unchanged, though the general health declined. There was cicatrization of the scalp. Marked brain changes were seen at autopsy, which were similar in the two cases and were believed to be due to changes in the circulation of the blood. These authors believe there is considerable danger in the liberal use of x-radiation to the head.

1. Spies, T. D.; Sasaki, Y.; and Gross, Esther: A Note on the Relationship of Porphyrinuria to Human Pellagra. Sou. Med. Jour., **31**:483 (May) 1938.
2. Nessa, Curtis B.: Effect of Treatment of Brain Tumors with Roentgen Rays. Review of University Hospital Cases. Radiology, **31**:670 (Dec.) 1938.
3. Scholz, W.; and Hsu, Y. K.: Late Damage from Roentgen Irradiation of Human Brain. Arch. Neurol. & Psychiat., **40**:928 (Nov.) 1938.

Regulation of Liver Function.—After removal of the liver the blood sugar rapidly falls and life may be maintained for a time in hepatectomized animals by intravenous injections of glucose. One of the functions of the liver is to maintain the level of blood sugar, and Mann[1] and his associates have recently demonstrated something of the mechanism of this regulation. Blood coming from the liver has a higher sugar content than blood entering this organ. Secretion of sugar into the blood by the liver may be stopped by injecting dextrose into the veins. When the blood sugar rises, the blood from the liver ceases to show an increase of sugar. As the blood level falls, the liver begins again to secrete sugar into the blood. The sugar level itself, thus, is a regulator of secretion of sugar by the liver.

Liver Deaths.—In a series of very interesting studies on biliary and hepatic diseases and liver function, Boyce and McFetridge[2] note the importance of sugar as a preventive of liver injury. During investigation of a liver function test they concluded that if an abundance of sugar is supplied to a patient before operation, liver injury from the anesthetic or operation may be considerably reduced. Before operation, sugar may be given better by mouth than intravenously.

Vanderbilt workers[3] some years ago investigated the cause of the occasional toxic symptoms or deaths from carbon tetrachloride used as an anthelmintic. Extensive necrosis was seen in the liver of dogs poisoned with carbon tetrachloride. The diet taken a few days before the treatment influenced the degree of liver injury. Carbohydrate was important, but calcium treatment maintained the blood sugar level better than did dextrose. If large quantities of milk, or bone, or merely calcium, were supplied for a few days before administration of carbon tetracholride, death rarely occurred and liver injury was infrequent, not great. Calcium they believed to have a protective effect on the liver, and in maintaining the blood sugar.

It is probable that glucose is needed by the liver in its reaction to many kinds of injury. It is also possible that calcium may have a protective effect on the human liver as on that of the dog.

1. Soskin, S.; Essex, H. E.; and Mann, F. C.: Mechanism of Regulation of Blood Sugar by the Liver. Amer. Jour. Physiol., **124**:558 (Nov.) 1938.
2. Boyce, F. F.; and McFetridge, E.: Studies of Hepatic Function. Arch. Surg., **37**:401-455 (Sept.) 1938.
3. Minot, A. S.; and Cutler, J. T.: Guanidine Retention and Calcium Reserve as Antagonistic Factors in Carbon Tertachloride and Chloroform Poisoning. Proc. Soc. Exp. Biol. & Med., **26**: 138, 1928. Editorial. Low Blood Sugar. Sou. Med. Jour., **22**: 1109, 1929.

TWENTY-FIVE YEARS AGO

From the Southern Medical Journal of January 1914

Optimism.—A review of "A Manual of X-Ray Technic" by Arthur C. Christie,[1] instructor in radiology and operative surgery, Army Medical School, Washington, D. C, says: "A brief description of the elements of electricity and electrical apparatus precedes the discussion of the technic and uses of the radiograph. So clearly and briefly presented is this subject that the physician without previous experience in such work can make rapid strides towards efficiency in the use of the x-ray in his practice."

Hookworm in Alabama.[2]—"Dr. C. A. Grote and Dr. E. V. Colwell, of the Hookworm Commission, examined 186 persons during the month of October and found 55 per cent infected. Lectures were delivered at various points in Mobile County, to which their work had been confined. They estimate that there are 200,000 cases of hookworm disease in the State of Alabama."

South Carolina.[3]—"Dr. J. Adams Hayne, State Health Officer, advises parents to give immediate attention to any soreness of the throat which children may develop. He says diphtheria is very prevalent throughout the State."

South Carolina.[4]—"South Carolina physicians are proud of the fact that two of their number were honored with positions at the recent meeting of the Southern Medical Association. Dr. Robert Wilson, Jr., of Charleston, was made Chairman of the Section on Medicine and Dr. J. W. Jervey, of Greenville, was elected First Vice-President of the Association."

Advertisements.[4]—"Melubrin, in the treatment of various forms of rheumatism.

"Pluto water especially effective in gastro-intestinal disturbances. Specifically indicated in uric acid diathesis, gout, chronic rheumatism, constipation, obesity, nephritis.

"Sherman's bacterins.

"Doctor, you need a Marshall's convertible hand-case saddle bag * * * a first-class hand or buggy case or saddle bag.

The leucodescent therapeutic lamp is the standard apparatus for the therapeutic application of light energy. It can be used with surprisingly satisfactory results in more than three-fourths of the cases that occur in a general medical practice. * * * Send for our booklet No. 9 and you will receive more data on light therapy than can be found in all textbooks combined."

1. Book Review Section. Sou. Med. Jour., **7**:85, 1914.
2. Southern Medical News, Alabama. Sou. Med. Jour., **7**:85, 1914.
3. Ibid, p. 24.
4. Ibid, xxiii-xxvi.

Book Reviews

The Compleat Pediatrician. By Wilburt C. Davison, Professor of Pediatrics, Duke University, Durham, North Carolina. Durham: Duke University Press, Second edition, 1938. Cloth $3.75.

Seldom has a book been published with as much detailed information of a helpful nature as the first edition of "The Compleat Pediatrician." In this, the second edition, the author has surpassed his former effort and as he aptly puts it in the preface, this revision might well be called "The Compleater Pediatrician." All the advances in pediatrics occurring in the last four years have been included, and one can appreciate the enormous amount of work involved in reviewing over 7,500 references. In this edition the author has given a necessarily brief description of each disease followed by the accepted treatment given in detail. As in the first edition, the portion of the work devoted to laboratory and other procedures, is extremely useful for ready reference. On the whole, no review can do the book justice, and it must be seen and read to be appreciated. Its use is strongly recommended to students and physicians who deal with children in their every-day work.

Medicine in Modern Society. By David Riesman. 226 pages. Princeton, New Jersey: Princeton University Press, 1938. Cloth $2.50.

Thirty-five years ago the reviewer was permitted to drop in occasionally to hear and admire a clinic given by Dr. Riesman. Four or five years ago he saw a notice of an appreciation of Sydenham by the doctor and read it with genuine pleasure.

Not long since he purchased "Medieval Medicine" by the same author and found it most informing. Now comes "Medicine in Modern Society," a short treatise of hardly two hundred pages, but an inspiration and a joy. The author writes well, is tolerant but very decisive in his statements; all chapters are excellent both for the layman and the physician, but the one on "Medical Ethics" is especially satisfactory and the one on "The Social Outlook in Medicine" is peculiarly appropriate at this time. This is a splendid book that might well adorn the table in every physician's waiting room. It is most pleasing to note that distinguished physicians, those who have made great success in practice, are willing in their mellow years to proffer words of guidance, caution and wise philosophy. Dr. Riesman has always been a stimulating teacher and this volume is probably his best contribution.

Pathological Technic. By Frank B. Mallory, A.M., M.D., S.D., Consulting Pathologist to the Boston City Hospital, Boston, Massachusetts. First Edition. 434 pages, illustrated. Philadelphia and London: W. B. Saunders Company. Cloth $4.50.

The advances of recent years, particularly in the field of biochemistry, have added greatly to knowledge of disease, but it remains true that the final explanation of disease processes must often rest upon pathologic anatomy. Since this involves exact study of microscopic cellular changes, the methods used for the demonstration of these changes have much to do with the

success or failure of tissue study. The present book takes its place immediately as an authoritative source book of these methods. For many years the textbook of Mallory and Wright was the technician's bible. Out of print for over a decade, the book has been sorely missed. But now we have it in up-to-date revision, completely recast, and stamped throughout with the concise style and clear thinking of a great teacher and cytologist. Dr. Mallory's own staining methods are used constantly the world over and he ranks with the greatest as a master of accurate technic.

His book preserves the best of the older methods and sifts from the many introduced during recent years those found by actual trial to be simplest and most valuable. Part I deals with laboratory equipment and the methods for fixing and preparing tissues. Part II lists in detail the staining methods used for general and special purposes. The various cellular and organ constituents are taken up *seriatim* and the most approved staining methods are detailed. The final chapter deals with the demonstration of infectious agents and parasitic worms. Part III is a comprehensive treatise on the methods for performing the autopsy. Detailed statement of the basic procedure of Virchow is followed by shorter treatment of three other methods as used in some clinics and occasionally found desirable in all. A final section provides useful tables of weights and measures for the normal organs of infants, children and adults. There is a chapter on the methods for preserving gross specimens for museum exhibit, a chapter on the photography of gross specimens and microscopic preparations, including the making of lantern slides and a final short chapter on formulae useful for various purposes in the laboratory. Finally there are eight pages of bibliography.

Without detracting from the value of other books on histological methods, it will be found that the present volume is outstanding in its careful selection of methods, in its clear and forceful statement of the science and art of tissue preparation, and in its general usefulness. For any one dealing with tissue work it will be as necessary as a microtome and its more general sections will demand a place on the shelves of every clinical laboratory.

Urology. By Daniel N. Eisendrath, M.D., Consulting Urologist to the American Hospital, Paris, France; Assistant Professor of Surgery (Genito-Urinary), Rush Medical College of the University of Chicago; and Harry C. Rolnick, M.D., Formerly Clinical Professor of Urology, Loyola University Medical School. Fourth Edition. 1061 pages, illustrated. Philadelphia: J. B. Lippincott Company, 1938. Cloth $10.00.

This, the fourth edition of this book, with 1,061 pages and 750 illustrations, is an indication of its popularity with the physician and medical student. The aim of the book is to simplify the subject of urology for teaching purposes. The previous editions were excellent, but with the revisions and introduction of new material, this book is without question outstanding in the completeness with which it covers the field of urology and venereal diseases in a single volume.

The illustrations are clear and leave an excellent mental picture of the subject under discussion. Those accompanying the different surgical procedures are in most instances works of art.

The more recent advances in urology, especially excretory urography and transurethral resections, are fully covered. There are included chapters on pediatric urology and nephritis.

It is a treatise on urology covering completely the pathology, diagnosis and treatment, both surgical and non-surgical, of the diseases of the genito-urinary system. It is well arranged, illustrated and indexed.

Macleod's Physiology in Modern Medicine. Edited by Philip Bard, Professor of Physiology, Johns Hopkins University School of Medicine, with the Collaboration of Henry C. Bazett, Professor of Physiology, University of Pennsylvania; George R. Cowgill, Associate Professor of Physiological Chemistry, Yale University School of Medicine; Harry Eagle, Past Assistant Surgeon, United States Public Health Service, and Lecturer in Medicine, Johns Hopkins University School of Medicine; Chalmers L. Gemmill, Associate in Physiology, Johns Hopkins University School of Medicine; Magnus I. Gregersen, Professor of Physiology, College of Physicians and Surgeons, Columbia University, Formerly Professor of Physiology, University of Maryland School of Medicine; Roy G. Hoskins, Director of Research, Memorial Foundation for Neuro-endocrine Research; Research Associate in Physiology, Harvard Medical School; J. M. D. Olmsted, Professor of Physiology, University of California; Carl F. Schmidt, Professor of Pharmacology, University of Pennsylvania. Eighth Edition. 1051 pages, illustrated. St. Louis: The C. V. Mosby Company, 1938. Cloth $8.50.

In medical school physiology is allotted its time, of course, in a crowded curriculum, but the average physician fails to realize how vague and inexact is his knowledge of physiologic processes until he reviews this work by Macleod.

The book is encyclopedic in the field of physiology. There are nine large subdivisions, including the circulation, the special senses, the endocrine glands, alimentary tract, and so on. Under each of these headings the individual physiologic processes are described clearly. The style is excellent and the language exceptionally simple for such a subject. In fact, the book is intensely interesting to pick up for an hour of review of scattered physiological processes as they come to mind, as well as for quick reference as occasion arises. For instance, what is the exact process of the act of vomiting? What causes anoxia and how does it take place under varying causes? What regulates the flow of lymph to the tissues? How does the ear differentiate the qualities of sound, and how does the eye differentiate colors?

Part Eight on "The Distribution and Regulation of Waste in the Body" is particularly interesting and important in view of the present realization of the role which the fluids play in our general well-being.

There are 355 illustrations consisting of color plates, graphs, charts, line drawings and photographs. One rarely sees a book which covers its subject so thoroughly and so authoritatively as does this work, and the readable style doubly recommends it.

BOOK REVIEWS continued on page 123

Officers

OFFICERS 1938-1939

The following is a complete roster of the officers of the Southern Medical Association for 1938-1939, and of associations meeting conjointly with the Southern Medical Association.

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Section on Obstetrics—Dr. Milton Smith Lewis, Chairman, Nashville, Tennessee; Dr. R. M. Anderson, Vice-Chairman, Shawnee, Oklahoma; Dr. Joseph W. Reddoch, Secretary, New Orleans, Louisiana.

Section on Urology—Dr. William N. Coppridge, Chairman, Durham, North Carolina; Dr. Henry S. Browne, Vice-Chairman, Tulsa, Oklahoma; Dr. Grayson Carroll, Secretary, St. Louis, Missouri.

Section on Proctology—Dr. Curtice Rosser, Chairman, Dallas, Texas; Dr. John L. Jelks, Vice-Chairman, Memphis, Tennessee; Dr. Fredk. Bennett Campbell, Secretary, Kansas City, Missouri.

Section on Railway Surgery—Dr. James W. Davis, Chairman, Statesville, North Carolina; Dr. Raymond L. Murdoch, Vice-Chairman, Oklahoma City, Oklahoma; Dr. Edgar F. Fincher, Secretary, Atlanta, Georgia.

Section on Ophthalmology and Otolaryngology—Dr. Lawrence T. Post, Chairman, St. Louis, Missouri; Dr. Harvey B. Searcy, Chairman-Elect, Tuscaloosa, Alabama; Dr. C. C. Cody, Vice-Chairman, Houston, Texas; Dr. L. Chester McHenry, Secretary, Oklahoma City, Oklahoma.

Section on Anesthesia—Dr. Carl W. Hoeflich, Chairman, Houston, Texas; Dr. J. D. McCulley, Vice-Chairman, Houston, Texas; Dr. Merrill C. Beck, Secretary, New Orleans, Louisiana.

Section on Medical Education and Hospital Training—Dr. M. Pinson Neal, Chairman, Columbia, Missouri; Dr. Robert U. Patterson, Vice-Chairman, Oklahoma City, Oklahoma; Dr. Harvey B. Haag, Secretary, Richmond, Virginia.

Section on Public Health—Dr. G. Foard McGinnes, Chairman, Richmond, Virginia; Dr. Charles M. Pearce, Vice-Chairman, Oklahoma City, Oklahoma; Dr. Henry C. Ricks, Secretary, Jackson, Mississippi.

American Public Health Association, Southern Branch (meeting conjointly with Southern Medical Association)—Dr. J. N. Baker, President, Montgomery, Alabama; Dr. W. B. Grayson, First Vice-President, Little Rock, Arkansas; Mr. V. M. Ehlers, Second Vice-President, Austin, Texas; Miss Donna Pearce, Third Vice-President, Washington, D. C.; Dr. P. E. Blackerby, Secretary-Treasurer, Louisville, Kentucky.

National Malaria Committee (meeting conjointly with Southern Medical Association)—Dr. L. O. Howard, Honorary Chairman, Washington, D. C.; Mr. L. M. Clarkson, Chairman, Atlanta, Georgia; Mr. W. G. Stromquist, Chairman-Elect, Chattanooga, Tennessee; Dr. L. T. Coggeshall, Vice-Chairman, New York, New York; Dr. Mark F. Boyd, Secretary-Treasurer, Tallahassee, Florida.

American Society of Tropical Medicine (meeting conjointly with Southern Medical Association)—Dr. Alfred C. Reed, President, San Francisco, California; Dr. L. L. Williams, Jr., President-Elect, Washington, D. C.; Dr. S. S. Cook, Vice-President, Norfolk, Virginia; Dr. E. Harold Hinman, Secretary-Treasurer, Wilson Dam, Alabama; Dr. Charles F. Craig, Editor, San Antonio, Texas.

Southern Association of Anesthetists (meeting conjointly with Southern Medical Association)—Dr. R. F. Bonham, President, Houston, Texas; Dr. T. L. Tidmore, President-Elect, Atlanta, Georgia; Dr. R. D. Sanders, Vice-President, Louisville, Kentucky; Dr. Dougal M. Dollar, Secretary-Treasurer, Louisville, Kentucky.

Women Physicians of the Southern Medical Association—Dr. Margaret Mary Nicholson, Chairman, Washington, D. C.; Dr. Leila E. Andrews, Vice-Chairman, Oklahoma City, Oklahoma; Dr. Nina Fay Calhoun, Secretary, Dallas, Texas.

Woman's Auxiliary to the Southern Medical Association—Mrs. W. K. West, President, Oklahoma City, Oklahoma; Mrs. Charles P. Corn, President-Elect, Greenville, South Carolina; Mrs. Lewis J. Moorman, First Vice-President, Oklahoma City, Oklahoma; Mrs. Olin S. Cofer, Second Vice-President, Atlanta, Georgia; Miss Grace Stroud, Recording Secretary, Louisville, Kentucky; Mrs. Allen G. Gibbes, Corresponding Secretary, Oklahoma City, Oklahoma; Mrs. K. W. Cosgrove, Treasurer, Little Rock, Arkansas; Mrs. W. W. Crawford, Historian, Hattiesburg, Mississippi; Mrs. Gordon Ira, Parliamentarian, Jacksonville, Florida.

SOUTHERN MEDICAL ASSOCIATION

Minutes of Thirty-Second Annual Meeting

Oklahoma City, November 15-18, 1938

GENERAL SESSION, PUBLIC

Tuesday, November 15, 8:00 p. m.

A General Session, to which the public was invited, was held at the Municipal Auditorium, Oklahoma City, Oklahoma, and was called to order by the General Chairman, Dr. Henry H. Turner, Oklahoma City, who presided.

Dr. Lucien A. LeDoux, First Vice-President, New Orleans, Louisiana, presented amendments to the By-Laws of the Southern Medical Association recommended by the Council, which automatically were laid on the table following their reading (See Report of Council for text).

Dr. Thomas P. Sprunt, Associate Professor of Medicine, University of Maryland School of Medicine and College of Physicians and Surgeons, and Visiting Physician, Johns Hopkins Hospital, Baltimore, Maryland, presented the subject, "Diet Fads, Foods and Vitamins."

Dr. Irvin Abell, Professor of Surgery, University of Louisville School of Medicine, President of the American Medical Association and Past President of the Southern Medical Association, Louisville, Kentucky, presented the subject, "The Role of Surgery in Fighting Disease."

Rev. Alphonse M. Schwitalla, S.J., Ph.D., Dean, St. Louis University School of Medicine, St. Louis, Missouri, presented the subject, "Society's Debts to the Doctor."

Preceding the speaking a musical program was rendered by the Oklahoma City University band.

GENERAL SESSION

PRESIDENT'S NIGHT

Wednesday, November 16, 8:00 p. m.

The Association met in General Session at the Skirvin Tower Hotel, Silver Glade Room, Oklahoma City, and was called to order by Dr. Henry H. Turner, Oklahoma City, General Chairman for the Committee on Arrangements, who presided during the first part of the session.

Dr. A. T. McCormack, State Health Officer of Kentucky, Louisville, Kentucky, delivered the invocation.

Dr. C. J. Fishman, President, Oklahoma County Medical Association, Oklahoma City, delivered an Address of Welcome in behalf of the Association and of Oklahoma City.

Dr. Walter E. Vest, Huntington, West Virginia, responded to the Address of Welcome in behalf of the Southern Medical Association.

Sitting with the President, by his invitation, in addition to the Past Presidents of the Southern Medical Association, were a number of the Presidents of other medical associations, state, regional and national, and members of the Council of the Southern Medical Association, all being individually introduced by the General Chairman, Dr. Turner.

The General Chairman, Dr. Turner, then introduced the President of the Southern Medical Association, Dr. J. W. Jervey, Greenville, South Carolina. Dr. Jervey presided during the remainder of the session.

Dr. J. W. Jervey, President of the Southern Medical Association, Greenville, South Carolina, read his President's Address, entitled "Ars Medica and Ars Poetica." (See Page 1 of this issue of the JOURNAL).

AMENDMENTS TO CONSTITUTION

Dr. J. W. Jervey, President, presented the following amendments to the Constitution, these amendments having been read at the General Session at the New Orleans meeting last year and laid on the table until this annual meeting:

To amend Article 3, Section 1, of the Constitution by adding the words "on active duty" and "Puerto Rico Medical Association." As amended, Article 3, Section 1, of the Constitution, shall read: The membership of this Association shall be limited to the white members of the various state and local medical societies of the following states, viz: Alabama, Arkansas, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, Missouri, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia; to white medical officers in the United States Army, Navy, Public Health Service and Veterans' Bureau on active duty, and to white American members of the Canal Zone Medical Association and the Puerto Rico Medical Association.

To amend Article 6, Section 1, of the Constitution by adding the words "a President-Elect." As amended Article 6, Section 1, of the Constitution shall read: The officers of the Association shall be a President, a President-Elect, two Vice-Presidents, a Board of Trustees, a Secretary, Treasurer and General Manager (any two or all of the latter three may be combined at the discretion of the Council with the approval of the Association, and where all three are combined, the office shall carry the title of Secretary-Manager), and Editor of the JOURNAL, and a Council composed of one member from each state or district in the Association.

It was moved that the amendments be adopted, was duly seconded, and carried without a dissenting vote.

REPORT OF COUNCIL

Dr. W. K. West, Oklahoma City, Oklahoma, Chairman of the Council, presented the following report for the Council:

To the Members of the Southern Medical Association:

The Council convened in three sessions at the Oklahoma Biltmore Hotel, Oklahoma City, Oklahoma, Monday afternoon, Tuesday and Wednesday at noon, November 14, 15 and 16, 1938. Present Monday afternoon: Dr. W. K. West, Chairman, Oklahoma City, Oklahoma; Dr. E. W. Rucker, Jr., Birmingham, Alabama; Dr. W. T. Wootton, Hot Springs National Park, Arkansas; Dr. Wm. Thornwall Davis, Washington, District of Columbia; Dr.

Edgar G. Ballenger, Atlanta, Georgia; Dr. E. L. Henderson, Louisville, Kentucky; Dr. Arthur A. Herold, Shreveport, Louisiana; Dr. Harvey F. Garrison, Sr., Jackson, Mississippi; Dr. Alphonse McMahon, St. Louis, Missouri; Dr. Hamilton W. McKay, Charlotte, North Carolina; Dr. Oliver W. Hill, Knoxville, Tennessee; Dr. Guy F. Witt, Dallas, Texas; Dr. Vincent W. Archer, Charlottesville, Virginia; and Dr. R. J. Wilkinson, Huntington, West Virginia. Present Tuesday: All those present on Monday and, in addition, Dr. Kenneth M. Lynch, Charleston, South Carolina; and Dr. Thomas P. Sprunt, Baltimore, Maryland, representing Dr. J. Mason Hundley, Jr., Baltimore. Sitting with the Council Tuesday: Dr. J. W. Jervey, President, Greenville, South Carolina; and Mr. C. P. Loranz, Secretary-Manager, Birmingham, Alabama. Present Wednesday: All those present on Monday and Tuesday and, in addition, Dr. Warren W. Quillian, Coral Gables, Florida, representing Dr. Luther W. Holloway, Jacksonville, Florida. Sitting with the Council Wednesday: Mr. C. P. Loranz, Secretary-Manager, Birmingham, Alabama.

The Council recommends the following changes in the By-Laws of the Association, these changes having been presented at the General Session last night and are before you now for final action:

Chapter 3, Section 3, to be changed to read as follows: The report of the Council shall be presented to the Association at its business session on Wednesday at 11:30 a. m. at the General Clinical Session.

Chapter 4, Section 1, to add the following sentence: The program for the general sessions shall be formulated by the President, who may collaborate with the Executive Committee of the Council at any meeting of this Committee.

Chapter 5, Section 1, to read as follows: The Council shall meet Monday of the week of the annual meeting and daily thereafter during the annual meeting, the hour to be arranged by the Chairman of the Council, and at such other times as necessity may require, subject to the call of the Chairman, or on petition of three Councilors. At each annual meeting a Chairman for the succeeding year shall be elected. It shall, through its Chairman, make an annual report to the Association at the general business session of the Association on Wednesday of the week of the annual meeting at 11:30 a. m.

Chapter 5, add Section 5, the Section to read as follows: (a) There shall be an Executive Committee of the Council with power to act for the Council *ad interim* the regular or called meetings of the Council. The Executive Committee of the Council shall be composed of three members of the Council. (b) The members of the Executive Committee of the Council shall be elected by the Council to serve three years. (c) The members elected to the Executive Committee of the Council shall be selected from those who have served two years on the Council, that is, those having three years yet to serve on the Council. The first Executive Committee of the Council shall be elected so that each member shall have one, two and three years to serve. (d) On the first election of the Executive Committee of the Council the member to be elected to serve one year shall have served four years on the Council; the member for the two-year period shall have served three years on the Council; the member for the three-year period shall have served two years on the Council. (e) The President, the President-Elect and the Chairman of the Council shall be ex-officio members. The Secretary-Manager shall be available during all meetings of the Executive Committee of the Council to be called into consultation at the request of the Committee. (f) The Executive Committee of the Council shall meet at least once in the interim of the annual meeting of the Association, and at such other times and places as its Chairman or two of its members may call such a meeting. The Chairman of the Executive Committee of the Council shall notify members of the Council of all meetings not less than two weeks prior to the meeting. This does not apply to emergency meetings of the Executive Committee of the Council. The expenses of the Executive Committee of the Council shall be borne by the Southern Medical Association.

The Council confirmed an action by mail approving a recommendation of a special committee on a Section on Proctology, a majority of the Council having voted favorably for such a section.

The Council confirmed an action by mail approving the recommendation of a committee on a Section on Allergy, a majority of the Council having voted favorably for such a section.

The Council approved a report of a Committee on Publicity on Appendiceal Disease presented to the Section on Surgery last year, and desires to encourage the Section to carry out the recommendations of the report as a sectional program with the endorsement of the Southern Medical Association.

The Council approved a motion to make an amount not to exceed $1,000.00 available for advancing scientific medicine in the South, the fund to be administered at the discretion of the Executive Committee.

The Council voted unanimously to resume next year stenographic reporting of the sections of the Association.

The Council interpreted the session held on Tuesday evening to which the public was invited as a General Session under the terms of the Constitution.

Invitations of the Memphis and Shelby County Medical Society, Memphis, Tennessee, and of the Fulton County Medical Society, Atlanta, Georgia, were presented. A large delegation from Memphis appeared in behalf of their invitation. It was moved and carried unanimously that the invitation of Memphis for next year's meeting be accepted, and that the invitation of Atlanta be not at this time considered because the physical facilities there are not now adequate.

The report of the Board of Trustees, incorporating the report of the Secretary-Manager, was read and approved.

REPORT OF TRUSTEES

To the Council of the Southern Medical Association:

The Trustees of the Southern Medical Association met in Private Dining Room 226 of the Oklahoma Biltmore Hotel, Oklahoma City, Wednesday, November 16, at 8:00 a. m. Present: Dr. Lewis J. Moorman, Chairman, Oklahoma City, Oklahoma; Dr. Irvin Abell, Louisville, Kentucky; Dr. Hugh Leslie Moore, Dallas, Texas; and Dr. Fred M. Hodges, Richmond, Virginia. Sitting with the Trustees: Mr. C. P. Loranz, Secretary-Manager, Birmingham, Alabama.

The Secretary-Manager, Mr. C. P. Loranz, presented his report for the fiscal year ending October 31, 1938. The report was approved as presented and Mr. Loranz was extended the sincere thanks of the Trustees for his efficient management of the Association's affairs during the past year. The report is here transmitted to the Council.

The Trustees authorized the Secretary-Manager to purchase United States Savings Bonds to the amount of $2,500.00, making the surplus of the Association as represented by United States Government Bonds to the amount of $30,000.00. Since the Southern Medical Association is strictly a scientific organization, its sole purpose being to develop and foster scientific medicine in the South, and is in no sense a business organization, it is the judgement of the Trustees that a surplus of $30,000.00 in United States Government Bonds is sufficient to guarantee economic security, and in the future the excess of earnings over expenses should be used for the advancement of scientific medicine in the South.

There being no further business, the Trustees adjourned.

(Signed) LEWIS J. MOORMAN, *Chairman.*

REPORT OF SECRETARY-MANAGER

To the Southern Medical Association:

A detailed financial statement for the fiscal year ending October 31, 1938, is here given and is self-explanatory. It will be noted that the net profit for the year is $4,370.38. The cash on hand in bank as shown by the cash book is $2,958.96.

Included in the assets of the Association are registered United States Government Bonds, purchase value $27,531.40. Of these there are Treasury Bonds, for which we paid $9,831.40, par value $10,000.00, due 1946/1956, yielding 3¼ per cent interest; and United States Savings Bonds, for which we paid $17,700.00, payable in ten years, yielding approximately 2.9 per cent per year for the ten-year period. The purchase of these bonds was authorized by the Board of Trustees.

The books of the Association have been audited by Francis B. Latady & Company, Certified Public Accountants, and their report is transmitted herewith.

Last year we reported 7,021 members, and during the year we received 909 new members. The losses from resignations, deaths and suspensions were 749, leaving a net membership at this time of 7,281, a net gain for the year of 260. A comparative statement of membership for the past seven years accompanies this report.

BALANCE SHEET

Balance Sheet, Southern Medical Association, Fiscal Year Ending October 31, 1938 (November 1, 1937 to October 31, 1938)

		Debits	*Credits*
Surplus			$ 32,493.26
U. S. Government Bonds		$ 27,531.40	
Furniture and Fixtures		3,560.71	
Profit and Loss		365.27	
Paper Stock (print paper on hand)		1,194.58	
Depreciation			641.87
Revenue			
Advertising	$22,743.15		
Dues	27,012.47		
Subscriptions	1,406.70		
Reprints	308.96		
Exhibits	24,440.00		
Interest on Bonds and Sav.	375.00		
Paper Stock Profit	657.42		
Interest and Discount	539.12—		77,482.82
Expenses			
Publishing	$19,197.09		
Cuts and Electros	2,473.74		
Journal Wrappers	486.10		
Second Class Postage	1,440.00		
Office Postage	3,162.92		
Salary	20,147.35		
Stationery and Printing	5,421.80		
Office Supplies & Expense	814.56		
Telephone and Telegraph	591.78		
Office Rent	1,457.40		
Subscription Commissions	21.00		
Advertising Expense	327.88		
Addressograph Expense	96.26		
Traveling Expense	2,031.00		
Expense at New Orleans	13,392.10		
Banking Expense	37.79		
Publicity Consulting Ser.	220.00		
General Expense	1,050.90		
Section Secretaries' Expense	177.50		
Woman's Auxiliary	200.00—	72,747.17	
Accounts Receivable (owe us)		2,382.16	
Accounts Payable (we owe)			122.30
Cash		2,958.96	
		$110,740.25	$110,740.25

SUMMARY OF EARNINGS

Revenue Accounts	$77,482.82
Expense Accounts	72,747.17
Gross Profit	$ 4,735.65
Less Profit and Loss	365.27
Net Profit for Year Ending October 31, 1938	$ 4,370.38

SURPLUS ACCOUNT

Surplus, October 31, 1937	$32,493.26
Net Profit for Year Ending October 31, 1938	4,370.38
Surplus, October 31, 1938	$36,863.64

STATEMENT OF ASSETS AND LIABILITIES
October 31, 1938

Assets

U. S. Government Bonds	$27,531.40
Paper Stock (print paper on hand)	1,194.58
Furniture and Fixtures (Net—Less Depreciation)	2,918.84
Accounts Receivable (owe us)	2,382.16
Cash	2,958.96
	$36,985.94

Liabilities

Surplus	$36,863.64
Accounts Payable (we owe)	122.30
	$36,985.94

MEMBERSHIP BY STATES

The following is a comparative statement of the membership of the Southern Medical Association for the past seven years:

	1932	1933	1934	1935	1936	1937	1938
Alabama	500	470	513	458	466	452	439
Arkansas	217	175	220	202	219	227	207
District of Columbia	161	149	157	154	173	192	180
Florida	401	346	404	372	355	383	378
Georgia	506	424	502	524	506	543	522
Kentucky	455	331	228	332	345	340	327
Louisiana	546	445	419	443	420	523	588
Maryland	271	251	252	245	482	522	486
Mississippi	419	335	345	333	297	347	370
Missouri	228	191	199	419	521	486	432
North Carolina	343	307	375	365	402	431	410
Oklahoma	247	207	236	258	262	258	515
South Carolina	203	182	204	185	193	218	215
Tennessee	515	421	464	459	471	459	455
Texas	724	587	944	1160	1102	914	1038
Virginia	292	310	402	382	384	417	403
West Virginia	162	140	185	183	211	217	241
Other States and Foreign	137	86	83	93	102	92	75
Totals	6327	5357	6132	6567	6911	7021	7281

As your Secretary, Treasurer and General Manager, carrying the title of Secretary-Manager, I have endeavored this year, as I have in past years, to conduct your affairs in a satisfactory manner, trying at all times to be faithful and efficient. I have tried to be as economical as possible and to carry on the Association activities at the lowest cost without curtailing any more than possible the size of the JOURNAL each month and other Association activities.

I wish to express my appreciation for the cooperation of the President, Dr. J. W. Jervey, and all other officers, general and of the sections, and of the Editor, Dr. M. Y. Dabney, and Associate Editor, Mrs. Dabney, and all those working with me at headquarters, as well as the General Chairman for the Oklahoma City meeting, Dr. Henry H. Turner, and those working with him. I appreciate their help and cooperation.

(Signed) C. P. LORANZ, *Secretary-Manager.*

REPORT OF AUDITOR

Southern Medical Association:

We have audited the books and accounts of Southern Medical Association, of Birmingham, Alabama, for the year ended October 31, 1938, and

WE HEREBY CERTIFY that in our opinion the Trial Balance, Summary of Earnings, Statement of Assets and Liabilities, and Analysis of the Surplus Account, as at October 31, 1938, which are hereto attached, correctly set forth the condition of the Association as at October 31, 1938, and the results of its operations for the fiscal year ended on that date.

The item of Profit and Loss, amounting to $365.27, consists of the following: Depreciation on Furniture and Fixtures $356.07 and Bad Debts charged off $9.20; total $365.27.

The total revenues of the fiscal year amounted to $77,482.82 as compared with $72,188.59 the previous year, an increase of $5,294.23, while the expenses, including depreciation and bad debts, amounted to $73,112.44, and showed an increase of $9,256.16. The net profit for the year was $4,370.38, which is somewhat less than the previous year, but it must be remembered that yours is a professional and service organization, not aiming at the accumulation of profits.

You will note from the Balance Sheet that the reserve of U. S. Government Bonds has reached the figure of $27,531.40. A considerable portion of this reserve is in Savings Bonds, on which no interest is currently paid, the principal plus interest at a little less than three per cent being paid at the end of ten years. In consequence, when these bonds are paid off, you will have a much larger sum on hand. This is a situation which should be very gratifying to your member-

ship, making for the stability of the Association in future times of stress.

Your books and accounts we found to be in better condition than usual, if such a thing is possible, and repeat our commendations of your entire office and organization, which deserve, as they undoubtedly receive, the highest appreciation of your Association.

(Signed) FRANCIS B. LATADY & Co.,
Certified Public Accountants,
FRANCIS B. LATADY, C. P. A.

Birmingham, Alabama, November 12, 1938.

It was moved and unanimously carried that the Secretary-Manager, Mr. C. P. Loranz, be extended the sincere thanks of the Council for the accumulation of a surplus in U. S. Government Bonds sufficient to guarantee economic security.

The Council instructed the Secretary-Manager to send telegrams to several members who were prevented from attending on account of illness, to several former members who were ill as well as to several presidents who were prevented from attending this meeting owing to illness of themselves or of their families.

The Council took cognizance of the death since its last meeting of Dr. Harvey S. Thatcher, of Little Rock, Arkansas, a member of the Council, and extends its sincere sympathy to the family and friends of Dr. Thatcher.

The Council reaffirmed its action of last year approving the Conference of the Presidents, Presidents-Elect and Secretaries of State Medical Associations and Editors of State Medical Journals, and approved the action of the Secretary-Manager in extending the invitation of the Association for those attending this conference dinner to be the guests of the Association.

A request from the Section on Medical Education to change the name of the Section to Section on Medical Education and Hospital Training was granted.

The Council, speaking for the Association, expresses to the Oklahoma County Medical Association, the Oklahoma State Medical Association, the hotels, the press and the radio broadcasting stations of Oklahoma City and to all others who have contributed so much to the success of the meeting in this city their sincere appreciation for the hospitality extended to us while guests in Oklahoma City. It is the opinion of the Council that this, the Oklahoma City meeting, has been one of the best in the history of the Association. Those who are in attendance have enjoyed the sincere hospitality of the profession and feel that a great measure of credit for the success of the meeting is due to the interest manifested by the local profession and by the citizens of Oklahoma City.

The Council proceeded to the election of three trustees for a term of two years each, the terms of Dr. Lewis J. Moorman, Oklahoma City, Oklahoma; Dr. Hugh Leslie Moore, Dallas, Texas, and Dr. Fred M. Hodges, Richmond, Virginia, expiring with this meeting. According to precedent, Dr. Lewis J. Moorman, oldest member in point of service, was retired. Dr. Moore and Dr. Hodges were reelected and the outgoing President, Dr. J. W. Jervey, was elected in place of Dr. Moorman.

The three Councilors whose terms expire with the close of this meeting, Dr. Harvey F. Garrison, Jackson, Mississippi, Dr. Arthur A. Herold, Shreveport, Louisiana, and Dr. W. K. West, Oklahoma City, Oklahoma, expressed their appreciation of having been privileged to serve the Association in this capacity. It was moved and unanimously carried that a vote of thanks of the Council be extended to the retiring Councilors for the splendid service they had rendered.

The Council elected the following as members of the newly created Executive Committee: Dr. Wm. Thornwall Davis, Chairman, Washington, District of Columbia, for one year; Dr. Vincent W. Archer, University, Virginia, two years; and Dr. Alphonse McMahon, St. Louis, Missouri, three years.

The Council unanimously elected Dr. Edgar G. Ballenger, Atlanta, Georgia, as its Chairman for next year.

The Council then adjourned as an executive body to meet in Memphis, Tennessee, at the regular meeting in 1939.

The Council then convened as a Nominating Committee for the general officers of the Association, these nominations to be presented later in the regular order of business.

(Signed) W. K. WEST, *Chairman.*

Following the reading of that part of the Report of the Council dealing with the amendments to the By-Laws, a motion was made to adopt the amendments as presented, was duly seconded, and carried without a dissenting vote. At the completion of the reading of the Report of the Council, it was moved that the Report be adopted, was duly seconded, and carried without a dissenting vote.

REPORT OF NOMINATING COMMITTEE

Dr. W. K. West, Oklahoma City, Chairman of the Nominating Committee, presents the report of the Committee:

The Council, as your Nominating Committee, presents for your consideration the following:

For President: Dr. Walter E. Vest, Huntington, West Virginia.

For President-Elect: Dr. Arthur T. McCormack, Louisville, Kentucky.

For First Vice-President: Dr. Henry H. Turner, Oklahoma City, Oklahoma.

For Second Vice-President: Dr. Wm. Hibbitts, Texarkana, Texas.

Your Secretary, Treasurer and General Manager, carrying the title of Secretary-Manager, Mr. C. P. Loranz, was elected two years ago for a term of five years.

Your Editor, Dr. M. Y. Dabney, and Associate Editor, Mrs. Eugenia B. Dabney, were elected last year for a term of three years.

(Signed) W. K. WEST, *Chairman.*

It was moved the report of the Nominating Committee be received and the Secretary instructed to cast the unanimous vote of those present for the nominees. The motion was duly seconded and carried without a dissenting vote. The Secretary then announced the unanimous vote of those present for the nominees. The President, Dr. Jervey, declared the nominees duly elected.

Dr. Walter E. Vest, Huntington, West Virginia, the newly elected President of the Southern Medical Association, was escorted to the platform and introduced by Dr. Jervey. Dr. Vest, in accepting the office of President, said:

Mr. President, Gentlemen of the Council, Fellow Members of the Southern Medical Association, Ladies and Gentlemen:

There are times when our feelings are too deep for adequate expression, and such is the situation when our co-workers confer upon us great honors without regard to our unworthiness to receive such tributes of esteem and confidence.

Coming at a time when the future of medicine and of the medical profession is more enveloped in mist and fog than has been the case for many years, it is fortunate for me as President that the Southern Medical Association is purely a scientific body and by its Constitution forbidden to engage in political activities and in the field of medical economics. While as individual physicians we should be much interested in these phases of our life work, we should engage in these activities through our great national organization, the American Medical Association, and its constituent units, our state and local societies.

Believing as I do in the wisdom of the policy we have heretofore pursued, I shall follow the course charted by my predecessors and strive during the period of my incumbency as President to keep the Southern Medical Association a purely scientific body and to make its function entirely educational, for in reality our organization has developed into what might well be termed a postgraduate assembly of the physicians of the South.

To the members of the Council and to my fellow members of the Southern Medical Association, I wish to express my sincere thanks for the very great honor bestowed upon me. I feel my unworthiness to receive it, and consider it rather as an honor coming to the profession of my State than to me personally. I therefore accept the very high honor you so graciously bestow upon me, and pledge to you and to the Southern Medical Association the best service that I am capable of giving.

Dr. Arthur T. McCormack, Louisville, Kentucky, the newly elected President-Elect of the Southern Medical Association, was escorted to the platform and introduced by Dr. Jervey. Dr. McCormack, in accepting the office of President-Elect, said:

Mr. President, Members of the Southern Medical Association, Ladies and Gentlemen:

It would be trite for me to tell you how happy you have made me by honoring me as your President-Elect in this newly created constitutional position. Having had the privilege of attending all but one of the sessions of this happiest of the purely scientific medical organizations, and therefore, being conscious of its great traditions, I would feel far more humility than is ordinarily felt by an Irish Kentuckian if I did not realize that you have so honored me as a representative of the medical profession of Kentucky, to whose loyalty, friendship and cooperation I owe everything that I am.

I am especially happy that this honor should have come to me at this particular time. Limiting my practice as I do to public health and medical organization, I feel that you have said to me and to my fellow physicians who are engaged in similar work that you are continuing your confidence in us as members of the greatest of all human service professions.

When and if the proposed National Health Program is enacted into law, the profession will be confronted with both enormous responsibilities and glorious opportunities for extended service. We are fortunate in most of our Southern states that our health departments have been developed as the legal administrative agencies of the medical profession in the prevention of disease and the promotion of the health of our people. In these states, we have won the confidence of our people, and, as long as we maintain that confidence, we may rest assured that so far as we are concerned at least, there will be no socialization, Federalization or state control of the practice of curative medicine. Ours is the simple and glorious task of better equipping ourselves to preserve or restore the health of the people in the communities composing our several states.

The members of this Association have bound themselves together for the purpose of promoting the scientific practice of medicine. I feel that it is an especial privilege to have been selected during the incumbency of Dr. Vest, who has already brought so much honor to the profession by his distinguished service.

Dr. Henry H. Turner, Oklahoma City, Oklahoma, newly elected First Vice-President, was introduced by Dr. Jervey. The newly elected Second Vice-President was not present.

After announcements by the General Chairman, Dr. Turner, and the Chairman of the Entertainment Committee, Dr. Rex Bolend, the General Session adjourned, and with the completion of the programs by the sections in session Thursday and until noon Friday, the Association adjourned to meet in Memphis, Tennessee, in November 1939.

SCIENTIFIC AWARDS

The Committee on Scientific Awards presented the following report:

We, your Committee on Scientific Awards, visited the scientific exhibits, went over them very carefully, and make the following report:

First award to Dr. A. C. Scott, Temple, Texas, for his exhibit on mammary tumors: diagnosis and treatment.

Second award to Dr. Graham Asher, Dr. Frank Hoecker and Dr. George Walker, Kansas City, Missouri (University of Kansas School of Medicine, Kansas City, Kansas), for their exhibit on (1) lag screen electrocardiogram; and (2) cathode ray electrocardiograph.

Third award to Dr. R. H. Rigdon, Vanderbilt University School of Medicine, Nashville, Tennessee, for his exhibit on lesions produced by staphylococci and staphylococcus toxin in experimental animals.

Honorable mention to—

Dr. Hugh Jeter, Dr. Wayne M. Hull and Dr. Maynard S. Hart, University of Oklahoma School of Medicine, Oklahoma City, Oklahoma, for their exhibit on primary tumors of bone.

Dr. J. Ross Veal, Washington, D. C., and Dr. D. D. Baker, University of Louisiana School of Medicine, New Orleans, Louisiana, for their exhibit on anatomy and pathology of direct inguinal hernia: a new principle and operation for repair.

Dr. Johnny A. Blue, Oklahoma State Health Department, Panhandle District, Guymon, Oklahoma, for his exhibit on gleanings from the "dust bowl."

Dr. Ralph M. Stuck, Denver, Colorado, for his exhibit on broken necks: cervical fractures and dislocations with neurological findings.

Indiana State Medical Association, Bureau of Publicity, Indianapolis, Indiana, for their exhibit on the Indiana plan of preventive medicine: an antidote for state medicine.

There were so many excellent exhibits this year that the Committee found it very difficult to choose the outstanding ones.

(Signed) EVERETT L. BISHOP, *Chairman*,
JOHN B. YOUMANS,
CHARLES S. VENABLE,
Committee.

The Committee on Scientific Awards consists each year of the Chairman of the Section on Pathology, the Chairman of the Section on Medicine and the Chairman of the Section on Surgery. Dr. Everett L. Bishop, as Chairman of the Section on Pathology, was Chairman of the Committee; Dr. John B. Youmans was Chairman of the Section on Medicine; and Dr. Charles S. Venable was Chairman of the Section on Surgery.

GOLF TOURNAMENT

Dr. L. Chester McHenry, Oklahoma City, Oklahoma, Chairman of the Golf Committee, makes the following report for his Committee:

The eighteenth annual golf tournament for men of the Southern Medical Association was held in Oklahoma City, Oklahoma, at the Oklahoma City Golf and Country Club on Tuesday, Wednesday and Thursday, November 15-17. Seventy-six players entered for the tournament.

Dr. Arthur M. Alden, St. Louis, Missouri, won the tournament for low gross, senior class (men fifty or over), receiving the Ralston Purina Cup, the major trophy for this event.

Dr. Zale Chaffin, Oklahoma City, Oklahoma, won the tournament for low gross, junior class (men under fifty), receiving the *Oklahoman and Times* Cup, a new trophy in play for the first time, the major trophy for this event.

Dr. Roy E. Emanuel, Chickasha, Oklahoma, was the runner-up in low gross, receiving the Schwarzschild Cup, the major trophy for this event.

Dr. Paul H. Hemphill, Pawhuska, Oklahoma, won the handicap tournament for low net, receiving the *Dallas Morning News* Cup, the major trophy for this event.

Dr. R. Glen Spurling, Louisville, Kentucky; Dr. John Davis, Seminole, Oklahoma; Dr. E. Rankin Denny, Tulsa, Oklahoma; and Dr. R. Q. Atchley, Tulsa, Oklahoma, were awarded prizes for minor events.

Dr. S. M. Hill, Dallas, Texas, was presented, as his permanent possession, with the *Washington Post* Cup, which has been in play since 1923, he being the only golfer who had won this cup three times.

The twelfth annual tournament for ladies was held at the Oklahoma City Golf and Country Club, Tuesday forenoon, November 15. Only five ladies came out for the tournament.

Mrs. W. C. Fain, Ardmore, Oklahoma, won the ladies' tournament, the Dick X-Ray Cup being the major trophy for this event.

Mrs. Fenton M. Sanger, Oklahoma City, Oklahoma, was the runner-up in the ladies' tournament.

The *Oklahoman and Times* Cup, the Ralston Purina Cup, the Schwarzschild Cup, the *Dallas Morning News* Cup, for men, and the Dick X-Ray Cup for women, must all be won three times in

succession by the same golfer to become the permanent possession of any golfer. No one having won any of these trophies three times in succession, they will all be in play at the tournament next year.

Owing to the small number of ladies taking part in the ladies' tournament at Oklahoma City, five in all, and from information obtained as to the small number taking part in other cities for the past several years, the Golf Committee recommends that the golf tournament for ladies be discontinued.

The golf tournament for men has always been administered in a very informal manner. Decisions in the matters of awarding trophies, handicapping and eligibility of players has at times taxed the local committee's sense of responsibility. Therefore, the Committee recommends that the governing body of the Southern Medical Association provide an official golf committee to assist and direct the local golf committees and to have authority to make and uphold whatever decisions need to be made. The committee need only have three members, one of whom may be the Chairman of the Golf Committee in the city where the meeting is to be held.

(Signed) L. CHESTER MCHENRY, *Chairman.*

TRAP SHOOTING TOURNAMENT

Dr. Theodore G. Wails, Oklahoma City, Oklahoma, Chairman of the Trap Shooting Committee, gave the following report for his Committee:

The thirteenth annual trap shooting tournament of the Southern Medical Association, to which skeet has been added in recent years, was held over the traps of the Capitol City Gun Club, Oklahoma City, Oklahoma, Wednesday, November 16, at 1:00 p. m.

Dr. R. R. Kirkpatrick, Texarkana, Arkansas, the high man on 100-16 yard targets, straight traps, won a leg on the *Atlanta Journal* Bowl, the major trophy for this event, with a score of 94.

Dr. Theodore G. Wails, Oklahoma City, Oklahoma, the high man on skeet, 50 targets, won a leg on the Sharp & Dohme Bowl, the major trophy for this event, with a score of 45.

Dr. R. R. Kirkpatrick, Texarkana, Arkansas, high man in the high over all, 100-16 yard targets, straight trap, and 50 skeet, won a leg on the Mallinckrodt Bowl, the major trophy for this event, with a score of 135.

In addition to the trophies for the three major events, prizes were given for some minor events.

There were thirty-five entries for the shoot, the weather was fine, and the shoot went off well and was enjoyed by all the shooters.

The *Atlanta Journal* Bowl, the Sharp & Dohme Bowl and the Mallinckrodt Bowl must each be won three times in succession by the same shooter to be the permanent possession of any shooter. No one having won these trophies three times in succession, they will be in competition at the tournament shoot again next year.

(Signed) THEODORE G. WAILS, *Chairman.*

WOMEN PHYSICIANS OF THE SOUTHERN MEDICAL ASSOCIATION

Wednesday, November 16, 7:00 p. m.

The twenty-fifth annual meeting and dinner of Women Physicians of the Southern Medical Association was held in the Crystal Room of the Skirvin Hotel, Oklahoma City, Oklahoma, Wednesday, November 16, at 7:00 p. m.

Dr. Leila E. Andrews, Oklahoma City, Oklahoma, Local Chairman for Women Physicians, welcomed the visiting women physicians and introduced the Chairman, Dr. Ruth G. Aleman, New Orleans, Louisiana, who presided.

After the business session, Dr. Lillian South-Tye, Louisville, Kentucky, first Chairman of the Women Physicians of the Southern Medical Association, and Dr. Elizabeth Bass, New Orleans, Louisiana, an early Chairman, gave interesting talks. Letters were read from a number of members unable to attend.

A vote of thanks was given to the members of the local committee, Dr. Leila E. Andrews, Dr. Eva Wells and Dr. Mary V. S. Sheppard.

The Nominating Committee reported the following nominations for officers, the nominees being unanimously elected:

Chairman—Dr. Margaret Mary Nicholson, Washington, D. C.
Vice-Chairman—Dr. Leila E. Andrews, Oklahoma City, Oklahoma.
Secretary—Dr. Nina Fay Calhoun, Dallas, Texas.

Following the dinner the women physicians attended the President's reception, grand ball and entertainment at the Skirvin Tower Hotel.

Alpha Epsilon Iota was hostess Thursday at noon at a luncheon for the visiting women physicians in the Venitian Room of the Y.W.C.A., and in the afternoon the women physicians of Oklahoma City were hostess at an informal tea at the home of Dr. Leila E. Andrews.

Fifty women physicians were in attendance upon the Oklahoma City meeting.

CONFERENCE OF PRESIDENTS, PRESIDENTS-ELECT, SECRETARIES AND EDITORS

The Presidents, Presidents-Elect and Secretaries of state medical associations of the states comprising the Southern Medical Association and Editors of state medical journals in these states, had a get-together meeting in connection with the annual meeting of the Southern Medical Association, Oklahoma City, Oklahoma, Tuesday, November 15, at 6:00 p. m. in the main dining room of the Oklahoma Biltmore Hotel. A similar conference was held in connection with the Baltimore meeting in 1936 and the New Orleans meeting in 1937.

All the Presidents, Presidents-Elect, Secretaries and Editors in the states comprising the Southern Medical Association were invited to this get-together conference meeting, held for the purpose of exchanging ideas, for informal discussion of matters of mutual interest, and for the dissemination of information—a general round table session. Those invited were requested to appoint some outstanding physician from his state to represent him in the event he could not personally attend. The group was the guest of the Southern Medical Association for the dinner.

Dr. Harvey F. Garrison, Chairman of the Conference, Jackson, Mississippi, called the meeting to order and presided.

Dr. W. K. Speed, President of the Oklahoma State Medical Association, Sayre, Oklahoma, extended a cordial welcome and hearty greetings to the group in behalf of the physicians of Oklahoma.

Dr. J. W. Jervey, President of the Southern Medical Association, Greenville, South Carolina, extended the greetings of the Association, commenting on the potential good to be accomplished by such a conference year after year.

Dr. Harvey F. Garrison, Chairman of the Conference, Jackson, Mississippi, read his Chairman's Address entitled "Trends in the Practice of Medicine and Medical Leadership." In his address he emphasized the apparent trend toward some kind of a national health program and suggested that if and when such plan was adopted there were three fundamental things to be safeguarded, viz: (1) the patient's right to call the physician of his choice; (2) that doctor-patient relationship shall not be disturbed; and (3) that direction of any such plan should be vested in physicians and not in laymen.

Dr. Irvin Abell, President of the American Medical Association and Past President of the Southern Medical Association, Louisville, Kentucky, spoke on "The National Health Conference," bringing to the group first hand information regarding this Conference and something of the work of the Committee of Seven from the American Medical Association collaborating with the National Government.

Dr. Felix J. Underwood, State Health Officer of Mississippi and Past President of the Southern Medical Association, Jackson, Mississippi, and Dr. W. H. Anderson, Editor of the *Mississippi Doctor*, Booneville, Mississippi, both spoke on the subject "The Apparent Need for More Adequate Medical and Hospital Care." Dr. Underwood presented statistics showing the number of people dying in the South unattended by physicians as shown by the large number of deaths for which no certificate of death is available from physicians. Dr. Anderson spoke briefly on the hospital plan in Mississippi.

Dr. Edward H. Cary, Past President of the American Medical Association and a Past President of the Southern Medical Association, Dallas, Texas, spoke on the subject "How Can the Members of the Conference Best Serve Medicine in the Light of Recent Events?" Dr. Cary is a member of the Committee of Seven of the American Medical Association and Chairman of that

Association's Committee on Legislative Activities. He discussed briefly the work of the Committees up to the time of his Conference.

Dr. Arthur T. McCormack, Secretary-Editor of the Kentucky State Medical Association and State Health Officer of Kentucky, Louisville, Kentucky, spoke on the subject "Some Suggestions for Increasing Membership in State Associations," bringing to the Conference helpful suggestions.

Dr. Harrison H. Shoulders, Speaker of the House of Delegates of the American Medical Association, Nashville, Tennessee, and Dr. Walter E. Vest, Huntington, West Virginia, another member of the Committee of Seven of the American Medical Association, both gave interesting and helpful talks when called upon by the Chairman.

The Conference was informal, those present taking an active part in its deliberations, many asking pertinent questions and giving helpful discussions. The Conference was well attended, every state being represented.

The value of the Conference in the minds of those present was evidenced by a motion unanimously carried that a similar Conference be held next year.

Dr. Harvey F. Garrison, who originated the idea of having these Conferences and who has served so acceptably for the past three meetings, was by unanimous vote requested to continue as Chairman for another year.

REGISTRATION

Oklahoma City Meeting, Southern Medical Association, November 15-18, 1938

	Number Physicians	Number Ladies Accompanying Physicians
Alabama	50	16
Arkansas	102	37
District of Columbia	15	2
Florida	20	6
Georgia	43	13
Kentucky	52	13
Louisiana	78	28
Maryland	17	3
Mississippi	49	19
Missouri	150	70
North Carolina	29	2
Oklahoma (outside Oklahoma City)	592	246
Oklahoma City	353	—
South Carolina	15	9
Tennessee	83	23
Texas	339	120
Virginia	20	3
West Virginia	15	4
Other States and Foreign	245	73
Total Physicians	2267	687
Sanitary Engineers and Sanitation Officers—not M.Ds.	31	6
Nurses—Oklahoma and Other States	71	
Nurses—Oklahoma City	202	
Technicians—Okla. and Other States	23	
Technicians—Oklahoma City	62	
Medical Students	262	
With Technical Exhibits	342	
Miscellaneous—Okla. and Other States	34	
Miscellaneous—Oklahoma City	51	
	3345	693
Ladies	693	
Grand Total	4038	

These figures are compiled from the card registration. There are always a number of physicians attending who neglect to register. The number attending who fail to register is estimated at from 3 to 10 per cent of the total registration. It is believed that at least 3 per cent of the physicians who attended the Oklahoma City meeting failed to register, and if this be true, an additional 68 physicians should be added to the 2,267 who did register, making the actual attendance apparently at least 2,335 physicians, with a grand total of 4,106.

RADIO BROADCASTS

The four Radio Broadcasting Stations of Oklahoma City cooperated with the Southern Medical Association in connection with the Oklahoma City meeting and the Association was on the air for the following programs:

Tuesday, November 15

Station W K Y, 12:15 p. m., "Pneumonia," Dr. Lee Rice, Vice-President, Southern Medical Association, San Antonio, Texas.

Station K O C Y, 5:45 p. m., "What You Should Learn," Dr. Guy F. Witt, Professor of Mental and Nervous Diseases, Baylor University College of Medicine and Member of Council, Southern Medical Association, Dallas, Texas.

Station K T O K, 12:30 p. m., "Medical Aspects of Child Training," Dr. Horton Casparis, Professor of Pediatrics, Vanderbilt University School of Medicine, Nashville, Tennessee.

Wednesday, November 16

Station W K Y, 12:15 p. m., "The Prevention of Tuberculosis," Dr. Paul H. Ringer, Immediate Past President of Southern Tuberculosis Conference and Past President North Carolina Medical Association, Asheville, North Carolina.

Station K O M A, 4:35 p. m., "The Importance of Early Diagnosis in Urinary Disorders," Dr. Edgar G. Ballenger, President, American Urological Association and Member of Council, Southern Medical Association, Atlanta, Georgia.

Station K O C Y, 8:15 p. m., "The Need of Public Health Service from the Standpoint of the Medical Profession," Dr. James N. Baker, State Health Officer of Alabama, Montgomery, Alabama.

Station K T O K, 5:30 p. m., "The Family Doctor of Today," Dr. Arthur T. McCormack, Immediate Past President, American Public Health Association and State Health Officer of Kentucky, Louisville, Kentucky.

Thursday, November 17

Station W K Y, 12:15 p. m., "Making Motherhood Safe," Dr. Quitman U. Newell, Professor of Clinical Obstetrics and Gynecology, Washington University School of Medicine, St. Louis, Missouri.

Station K O M A, 4:35 p. m., "Cancer as It Particularly Affects Women," Dr. Lucien A. LeDoux, Associate Professor of Gynecology, Louisiana State University Graduate School of Medicine, New Orleans, Louisiana.

Station K O C Y, 4:15 p. m., "The Early Diagnosis of Cancer," Dr. M. Y. Dabney, Editor, SOUTHERN MEDICAL JOURNAL, Birmingham, Alabama.

Station K T O K, 4:00 p. m., "The Significance of Nervousness," Dr. H. Randolph Unsworth, Assistant Professor of Nervous and Mental Diseases, Louisiana State University School of Medicine, New Orleans, Louisiana.

MOTION PICTURES

As part of the Oklahoma City meeting there were motion pictures at the Municipal Auditorium, Room No. 7, running continuously each day from Tuesday, November 15, 12:00 noon, until Friday, November 18, at 1:00 p. m.

Three times each day at a specified time there was a request period, at which time any film on the regular program or any

film approved by the management could be run provided it did not interfere with the regular program. At each request period films on the regular program and films not on the regular program were run.

The films on the regular program and which ran each day at specified times were:

"The Management of the Pneumonias" (30 minutes), Dr. J. G. M. Bullowa, New York, New York.

"Technic of Insulin Shock" (15 minutes), Dr. G. Wilse Robinson, Jr., Kansas City, Missouri.

"Thrombi and Emboli" (15 minutes), Dr. C. C. Howard, Glasgow, Kentucky.

"Cancer of Cervix" (20 minutes), Dr. Harold G. F. Edwards, Shreveport, Louisiana.

"Early Differential Diagnosis of Malignant Tumors of the Breast by Aid of Shadow Test" (12 minutes), Dr. A. C. Scott, Temple, Texas.

"Plastic Surgery with Patients Before and After Operations" (15 minutes), Dr. Wm. Milton Adams, University of Tennessee College of Medicine, Memphis, Tennessee.

(1) "Leukorrhea" (28 minutes), and (2) "Sterility" (23 minutes), Dr. Karl John Karnaky, Houston, Texas.

"Fetal Movements in Mammals (Guinea-Pig, Cat, Dog and Human)" (12 minutes), Dr. David S. Pankratz, University of Tennessee College of Medicine, Memphis, Tennessee.

"Technic of Circumcision of the New Born" (15 minutes), Committee on Postgraduate Medical Teaching, Oklahoma State Medical Association, Oklahoma City, Oklahoma.

"A Two-Stage Operation for Congenital Dislocation of the Hip in Children" (12 minutes), Dr. Paul C. Colonna, University of Oklahoma School of Medicine, Oklahoma City, Oklahoma.

"Surgical Treatment in Arthritis" (10 minutes), Dr. W. K. Ishmael and Dr. Earl D. McBride, University of Oklahoma School of Medicine, Oklahoma City, Oklahoma.

"Ophthalmic Operations" (28 minutes), Dr. Ray K. Daily, Houston, Texas.

"Gleanings from the 'Dust Bowl'" (15 minutes), Dr. Johnny A. Blue, Guymon, Oklahoma.

SCIENTIFIC AND TECHNICAL EXHIBITS

The Scientific and Technical Exhibits in connection with the thirty-second annual meeting of the Southern Medical Association were all placed on the exhibition floor of the Municipal Auditorium, Oklahoma City, Oklahoma, and were open on Tuesday, Wednesday and Thursday, November 15, 16 and 17, from 8:00 a. m. to 6:00 p. m. and on Friday, November 18, from 8:00 a. m. to 1:00 p. m.

There were sixty-eight (68) Scientific Exhibits, representing all phases of medicine and surgery, many of them being original research work. The Scientific Exhibits were conveniently placed and arranged so they could be easily seen and studied. See pages 102-104 for a complete list of the Scientific Exhibits and page 122 for the exhibit diagram.

In the Technical Exhibits there were eighty-four (84) business firms with a total of one hundred and thirty (130) exhibit spaces. See pages 121-122 for complete list of business firms and page 122 for exhibit diagram.

SCIENTIFIC EXHIBITS

The following were the Scientific Exhibits at the Oklahoma City meeting:

Space No.

Dermatology

1. DR. BEDFORD SHELMIRE and DR. J. GILMORE BRAU, Dallas, Tex.: Contact Eczema.

2. DR. EVERETT S. LAIN, DR. WM. E. EASTLAND, DR. JOHN H. LAMB and DR. SHERRILL CAUGHRON, Oklahoma City, Okla.: Electrogalvanic Phenomena of the Oral Cavity.

Space No.

Allergy

3. DR. RAY M. BALYEAT and DR. RALPH BOWEN, University of Oklahoma School of Medicine, Oklahoma City, Okla.: Schematic Correlation of Some Common Dietary and Environmental Allergens.

Psychiatry

4. DR. G. WILSE ROBINSON, JR., Kansas City, Mo.: Insulin: Its Psychiatric Applications.

Cancer Society

5-A. AMERICAN SOCIETY FOR THE CONTROL OF CANCER, Missouri State Committee, St. Louis, Mo.: Fight Cancer with Knowledge.

Cardiovascular

5-B. DR. C. E. SANDERS, Kansas City, Mo.: Demonstration of Intermittent Venous Occlusion and Gravity.

6. DR. GRAHAM ASHER, DR. FRANK HOECKER and DR. GEORGE WALKER, University of Kansas School of Medicine, Kansas City, Kans.: (1) Lag Screen Electrocardiogram; and (2) Cathode Ray Electrocardiograph.

7. DR. MERRITT B. WHITTEN, Baylor University College of Medicine, Dallas, Tex.: Midaxillary Leads of the Electrocardiogram.

Syphilis

8. DR. PAUL A. O'LEARY, Rochester, Minn.; DR. HOWARD N. COLE, Cleveland, Ohio; DR. JOSEPH EARLE MOORE, Baltimore, Md.; DR. THOMAS PARRAN, Washington, D. C.; DR. JOHN H. STOKES, Philadelphia, Pa.; DR. UDO J. WILE, Ann Arbor, Mich.; DR. R. A. VONDERLEHR and MISS LIDA J. USILTON, Washington, D. C.: An Evaluation of Modern Therapy in Tabes Dorsalis.

9. DR. JOSEPH EARLE MOORE, Baltimore, Md., and DR. R. A. VONDERLEHR, Washington, D. C.: The Diagnosis of Syphilis by the General Practitioner.

Medical Societies

10. INDIANA STATE MEDICAL ASSOCIATION, Bureau of Publicity, Indianapolis, Ind.: The Indiana Plan of Preventive Medicine: An Antidote for State Medicine.

11. THE AMERICAN COMMITTEE ON MATERNAL WELFARE, INC., Chicago, Ill.: The American Congress on Obstetrics and Gynecology.

12. OKLAHOMA CITY CLINICAL SOCIETY, Oklahoma City, Okla.: Society Activities.

13. OKLAHOMA COUNTY MEDICAL ASSOCIATION, Oklahoma City, Okla.: Association Activities.

Crippled Children

14. OKLAHOMA SOCIETY and the OKLAHOMA COMMISSION FOR CRIPPLED CHILDREN, Oklahoma City, Okla.: Crippled Children's Exhibit.

Public Health

15. CHILDREN'S BUREAU, U. S. DEPARTMENT OF LABOR, Washington, D. C.: How the Public Health Agency Safeguards the Nutrition for the Preschool Child.

16. DR. JOHNNY A. BLUE, Oklahoma State Health Department, Panhandle District, Guymon, Okla.: Gleanings from the "Dust Bowl."

17. MISSOURI STATE HEALTH DEPARTMENT, Jefferson City, Mo.: Public Health Activities.

Tropical Medicine

18. DR. R. B. H. GRADWOHL, St. Louis, Mo.: Parasitology and Tropical Medicine.

Arthritis

19. DR. WILLIAM K. ISHMAEL, University of Oklahoma School of Medicine, Oklahoma City, Okla.: Treatment of Arthritis, Past and Present.

20. DR. E. GOLDFAIN, University of Oklahoma School of Medicine, Oklahoma City, Okla.: Fibrositis: A Perennial Rheumatic Disease Problem.

Space No.

Gastroenterology

21. DR. M. HILL METZ and DR. ROBERT W. LACKEY, Baylor University College of Medicine, Dallas, Tex.: Peptic Ulcer Treated by Posterior Pituitary Extract.

Hematology

22. PROF. JOSEPH AMOZURRUTIA, S. J., and DR. FRENCH K. HANSEL, St. Louis, Mo.: The Acytoplasmocyte System and the Formation of Normal and Pathological Blood Cells.

23. DR. L. W. DIGGS and DR. C. B. OLIM, University of Tennessee College of Medicine, Memphis, Tenn.: Blood Bank.

24. DR. JOE M. HILL, DR. C. N. DUNCAN and MR. LEWIS WATERS, Baylor University College of Medicine, Dallas, Tex.: The Leukemoid Blood Picture.

Art in Medicine

25. MR. LEWIS WATERS, Baylor University College of Medicine, Dallas, Tex.: Further Demonstrations in Methods of Medical Illustrating.

Bacteriology

26. DR. H. D. MOOR and DR. ROBERT H. AKIN, University of Oklahoma School of Medicine, Oklahoma City, Okla.: Incidence of Pneumococcal Infections in Oklahoma.

27. DR. PAUL F. STOOKEY and DR. LOUIS A. SCARPELLINO, Kansas City, Mo.: Staphylococcus Infections.

28. DR. R. H. RIGDON, Vanderbilt University School of Medicine, Nashville, Tenn.: Lesions Produced by Staphylococci and Staphylococcus Toxin in Experimental Animals.

Laboratory

29. BOARD OF REGISTRY FOR MEDICAL TECHNOLOGISTS, Denver, Colo.: Registration of Medical Technologists.

Endocrinology

30. DR. AUGUST A. WERNER, St. Louis University School of Medicine, St. Louis, Mo.: Theelin: Clinical Studies.

31. DR. HENRY H. TURNER, University of Oklahoma School of Medicine, Oklahoma City, Okla.: Clinical Endocrinology.

Proctology

32. DR. CLAUDE C. TUCKER and DR. C. ALEXANDER HELLWIG, Wichita, Kans.: Proctological Pathology. Inflammatory and Neoplastic Diseases.

Neoplastic Diseases

33. DR. A. C. SCOTT, Temple, Tex.: Mammary Tumors: Diagnosis and Treatment.

34. DR. RIGNEY D'AUNOY, DR. BJARNE PEARSON and DR. BELA HALPERT, Louisiana State University School of Medicine, New Orleans, La.: Carcinoma of the Lung.

35. DR. J. M. MARTIN and DR. C. L. MARTIN, Baylor University College of Medicine, Dallas, Tex.: Radiotherapy in the Treatment of Cancer.

36. DR. HUGH JETER, DR. WAYNE M. HULL and DR. MAYNARD S. HART, University of Oklahoma School of Medicine, Oklahoma City, Okla.: Primary Tumors of Bone.

Pharmacology

37. DR. H. A. SHOEMAKER and DR. A. J. LEHMAN, University of Oklahoma School of Medicine, Oklahoma City, Okla.: Pharmacology of Ureter.

38. DR. A. P. McLEAN, University of Oklahoma School of Medicine, Oklahoma City, Okla.: Bio-Assay of Veratrum Viride.

Anatomy

39. DR. C. F. DEGARIS AND STAFF, University of Oklahoma School of Medicine, Oklahoma City, Okla.: Sectional Studies of the Human Body.

40. DR. C. F. DEGARIS and DR. R. E. CHASE, University of Oklahoma School of Medicine, Oklahoma City, Okla.: Studies of Arterial Patterns.

Space No.

Urology

41. DR. J. B. NEIL, Knoxville, Tenn.: The Neil Prostatic Resection. Artist's Sketches of Actual Operation.

Plastic Surgery

42. DR. WM. MILTON ADAMS, University of Tennessee College of Medicine, Memphis, Tenn.: Plastic Surgery.

43. DR. NEAL OWENS, Tulane University School of Medicine, New Orleans, La.: Plastic Surgery.

44. DR. JOHN F. BURTON, University of Oklahoma School of Medicine, Oklahoma City, Okla.: Plastic Surgery.

45. DR. GEORGE H. KIMBALL, University of Oklahoma School of Medicine, Oklahoma City, Okla.: Plastic Surgery.

46. DR. CURT VON WEDEL, Oklahoma City, Okla.: Plastic Surgery.

Chest

47. DR. JOHN ROBERTS PHILLIPS, Houston, Tex., and DR. LOUIS F. KNOEPP, Beaumont, Tex.: Surgical Lesions of the Chest.

48. DR. CLYDE BROOKS, Louisiana State University School of Medicine, New Orleans, La.: Deuteroproteoses in Pneumonias.

49. DR. DONALD B. ARMSTRONG, DR. RUSSELL L. CECIL and Dr. EDWARD S. ROGERS, New York, N. Y.: New Methods for Pneumonia Control.

Obstetrics and Gynecology

50. DR. KARL JOHN KARNAKY, Houston, Tex.: (1) Leukorrhea: Its Causes and Treatment; and (2) Foreign Proteins in Gynecology.

51. COMMITTEE ON POSTGRADUATE MEDICAL TEACHING, Oklahoma State Medical Association: Postgraduate Teaching in Obstetrics.

52. DR. WALTER W. WELLS, University of Oklahoma School of Medicine, Oklahoma City, Okla.: Pathological Obstetrics.

Surgery

53. DR. J. ROSS VEAL, Washington, D. C., and DR. D. D. BAKER, Louisiana State University School of Medicine, New Orleans, La.: Anatomy and Pathology of Direct Inguinal Hernia: A New Principle and Operation for Repair.

Otolaryngology

54. DR. HARRIS HOSEN and DR. FURMAN H. TYNER, Port Arthur, Tex.: Treatment of Chronic Sinusitis in Pediatrics.

Ophthalmology

55. DR. RAY K. DAILY, Houston, Tex.: Diagnosis and Treatment of Strabismus.

56. DR. THEODORE J. DIMITRY, Louisiana State University School of Medicine, New Orleans, La.: The Evolution of a Simple Extractor, Employing a Vacuum for Intracapsular Cataract Operation.

Orthopedic Surgery

57. DR. PAUL C. COLONNA, University of Oklahoma School of Medicine, Oklahoma City, Okla.: A Two-Stage Operation for Congenital Dislocation of the Hip in Children.

58. DR. D. H. O'DONOGHUE, University of Oklahoma School of Medicine, Oklahoma City, Okla.: A Modified Technic for Correction of Knee Contracture.

59. DR. HOWARD B. SHORBE, University of Oklahoma School of Medicine, Oklahoma City, Okla.: Car Window Elbows.

60. DR. RALPH M. STUCK, Denver, Colo.: Broken Necks: Cervical Fractures and Dislocations with Neurological Findings.

61. DR. W. K. WEST and DR. C. R. ROUNTREE, University of Oklahoma School of Medicine, Oklahoma City, Okla.: Fractures of the Forearm.

Space No.

62. SECTION ON BONE AND JOINT SURGERY, Southern Medical Association: Fracture Demonstrations. *Wednesday, 10:30 a. m. to 12:00 noon:* Knee and Leg—Dr. Herbert E. Hipps, Marlin, Tex., and Dr. Guy W. Leadbetter, Washington, D. C. *Thursday, 9:00 to 10:30 a. m.:* Wrist and Forearm—Dr. Walter G. Stuck, San Antonio, Tex., and Dr. Frank A. Hoshall, Charleston, S. C. *Thursday, 10:30 a. m. to 12:00 noon:* Spine—Dr. H. H. Haynes, Clarksburg, West Va., and Dr. I. William Nachlas, Baltimore, Md.

63. SECTION ON BONE AND JOINT SURGERY, Southern Medical Association: Fracture Demonstrations. *Wednesday, 10:30 a. m. to 12:00 noon:* Femur—Dr. Peter M. Keating, San Antonio, Tex., and Dr. Joseph B. Foster, Houston, Tex. *Thursday, 9:00 to 10:30 a. m.:* Humerus—Dr. Edmund M. Cowart, Houston, Tex., and Dr. Austin T. Moore, Columbia, S. C. *Thursday, 10:30 a. m. to 12:00 noon:* Hip—Dr. John D. Sherrill, Birmingham, Ala., and Dr. F. Walter Carruthers, Little Rock, Ark.

64. DR. EARL D. McBRIDE, University of Oklahoma School of Medicine, Oklahoma City, Okla.: Compound Fractures.

65. DR. ELIAS MARGO, Oklahoma City, Okla.: Low Back Pain.

66. DR. WALTER E. JOHNSTON, Vicksburg, Miss.: An Electric Saw for the Removal of Plaster Cast.

Neurological Surgery

67. DR. JAMES G. LYERLY, Jacksonville, Fla.: Neurological Surgery: Section of Association Pathways in Prefrontal Lobes: (1) Anatomical Considerations, (2) Operative Procedure, and (3) Clinical Cases.

68. DR. DEAN H. ECHOLS, Tulane University School of Medicine, New Orleans, La.: The Treatment of Trigeminal Neuralgia.

GENERAL CLINICAL SESSIONS

OKLAHOMA CITY DAY

Tuesday, November 15, 10:00 a. m.

A Clinical Session, MEDICINE—Section A, was held at the Municipal Auditorium, Room No. 5, Oklahoma City, Dr. W. W. Rucks, Sr., Oklahoma City, presiding.

The following presentations were made:

Nervous and Mental Diseases

Dr. C. J. Fishman, Oklahoma City: "Neurology from the Standpoint of the General Pracitioner."

Dr. Coyne H. Campbell, Oklahoma City: "Practical Technic in Treatment of Acute Neuroses in Financially Handicapped Individuals."

Respiratory Diseases

Dr. Floyd Moorman, Oklahoma City: "Pneumonia: Diagnosis."

Dr. W. Floyd Keller, Oklahoma City: "Pneumonia: Pathology and Bacteriology" (Lantern Slides and Motion Pictures).

Dr. George H. Garrison, Oklahoma City: "Pneumonia: In Children."

Dr. Lewis J. Moorman, Oklahoma City: "Pneumonia: Medical Treatment."

Dr. Horace Reed, Oklahoma City: "Pneumonia: Surgical Treatment of the Complications."

Dr. P. M. McNeill, Oklahoma City: "Bronchiectasis" (Lantern Slides).

Dr. Ray M. Balyeat, Oklahoma City: "Morphine: A Dangerous Drug in Chronic Asthma."

Dr. John E. Heatley, Oklahoma City: "Roentgenological Consideration of Influenzal Pneumonitis" (Lantern Slides).

The Session adjourned until 2:00 p. m.

Tuesday, November 15, 2:00 p. m.

The Clinical Session reconvened in the Municipal Auditorium, Room No. 5, Oklahoma City, Dr. Clark H. Hall, Oklahoma City, presiding.

The following presentations were made:

Dermatology

Dr. Everett S. Lain, Oklahoma City: "Epidermophyton (Ringworm) Infections: Primary and Secondary Eruptions" (Lantern Slides).

Dr. C. P. Bondurant, Oklahoma City: "Epidermophyton (Ringworm) Infections: The Use and Abuse of Treatment" (Lantern Slides).

Dr. Carl L. Brundage and Dr. Onis George Hazel, Oklahoma City: "Epidermophyton (Ringworm) Infections: Ultraviolet and X-Ray Treatment."

Diseases of the New Born

Dr. W. M. Taylor, Oklahoma City: "Asphyxia."

Dr. Ben H. Nicholson, Oklahoma City: "Hemorrhage."

Dr. J. B. Snow, Oklahoma City: "Factors Influencing Premature Infant Mortality" (Lantern Slides).

Rheumatism in Children

Dr. Carroll M. Pounders and Dr. James K. Gray, Oklahoma City: "Rheumatic Fever" (Lantern Slides).

Dr. A. L. Salomon, Oklahoma City: "Rheumatic Heart Disease."

Dr. George R. Felts, Oklahoma City: "Chronic Rheumatism."

Gastro-Intestinal

Dr. Arthur W. White, Oklahoma City: "Amebiasis" (Lantern Slides).

Dr. N. Price Eley, Oklahoma City: "Cancer of the Colon."

Dr. J. T. Martin, Oklahoma City: "Ulcerative Colitis."

Dr. Vern H. Musick, Oklahoma City: "Terminal Ileitis" (Lantern Slides).

Dr. Nesbitt L. Miller, Oklahoma City: "Allergy."

The Session then adjourned *sine die*.

GENERAL CLINICAL SESSION

OKLAHOMA CITY DAY

Tuesday, November 15, 2:00 p. m.

A Clinical Session, MEDICINE—Section B, was held at the Municipal Auditorium, Room No. 4, Oklahoma City, Dr. Lea A. Riely, Oklahoma City, presiding.

The following presentations were made:

Cardiovascular

Dr. Wann Langston, Oklahoma City: "Pain of Coronary Disease."

Dr. Bert E. Mulvey and Dr. Lea A. Riely, Oklahoma City: "A Familial Disease Exhibiting Nerve, Vascular and Trophic Changes" (Lantern Slides).

Dr. F. Redding Hood, Oklahoma City: "Valvular Disease."

Dr. W. W. Rucks, Jr., Oklahoma City: "Heart Failure."

Dr. John A. Roddy, Oklahoma City: "Hypertension."

Blood Diseases

Dr. Hugh Jeter, Oklahoma City: "Recurrent Agranulocytosis."

Dr. R. Q. Goodwin, Oklahoma City: "Macrocytic Anemia."

Dr. Walker Morledge, Oklahoma City: "Microcytic Anemia" (Lantern Slides).

Kidney Diseases

Dr. Elmer R. Musick, Oklahoma City: "Nephritis."

Dr. H. W. Butler, Oklahoma City: "Nephrosis."

Dr. L. A. Turley, Oklahoma City: "Pathology" (Lantern Slides).

Dr. Bert F. Keltz, Oklahoma City: "Diabetes Mellitus."

Metabolism

Dr. Leila E. Andrews, Oklahoma City: "Calcium Metabolism."

Dr. Tom Lowry, Oklahoma City: "Addison's Disease."

The Session then adjourned *sine die*.

GENERAL CLINICAL SESSIONS

OKLAHOMA CITY DAY

Tuesday, November 15, 10:00 a. m.

A Clinical Session, SURGERY, was held at the Municipal Auditorium, Room No. 2, Oklahoma City, Dr. C. R. Rountree, Oklahoma City, presiding.

The following presentations were made:

Traumatic Surgery

Dr. Earl D. McBride, Oklahoma City: "Treatment of Compound Fractures: Analysis of One Hundred Cases" (Motion Pictures).

Dr. Paul C. Colonna, Oklahoma City: "The Treatment of Ununited Fractures of the Neck of the Femur" (Lantern Slides and Motion Pictures).

Dr. Patrick S. Nagle, Oklahoma City: "The Physiological Basis for Treatment of Burns."

Dr. Curt von Wedel, Oklahoma City: "The Role of Plastic Surgery in Severe Face Injuries" (Lantern Slides).

Dr. D. H. O'Donoghue, Oklahoma City: "Common Fractures of the Upper Extremity" (Lantern Slides).

Dr. W. K. West, Oklahoma City: "Diagnosis and Treatment of Common Knee Injuries."

Urological Surgery

Dr. Basil A. Hayes, Oklahoma City: "The Role of Surgery in Renal and Ureteral Calculi."

Dr. Rex Bolend, Oklahoma City: "The Use of Testosterone Propionate in Prostatic Hypertrophy" (Lantern Slides).

Dr. Robert H. Akin, Oklahoma City: "Evaluation of Present Methods of Prostatic Surgery" (Lantern Slides).

Dr. Charles B. Taylor, Oklahoma City: "The Significance of Hemorrhage from the Genito-Urinary Tract."

The Session adjourned until 2:00 p. m.

Tuesday, November 15, 2:00 p. m.

The Clinical Session reconvened in the Municipal Auditorium, Room No. 2, Oklahoma City, Dr. LeRoy Long, Oklahoma City, presiding.

The following presentations were made:

General Surgery

Dr. Minard F. Jacobs, Oklahoma City: "Indications for Surgery in the Treatment of Gastric and Duodenal Ulcers."

Dr. D. D. Paulus, Oklahoma City: "Sources of Errors in the Roentgen Diagnosis of Upper Abdominal Lesions."

Dr. L. J. Starry, Oklahoma City: "Choice of Surgical Procedure in Gastric and Duodenal Ulcer."

Dr. LeRoy D. Long, Oklahoma City: "Diagnosis and Treatment of Gastric Carcinoma" (Lantern Slides).

Dr. R. M. Howard, Oklahoma City: "Diverticula of the Gastro-Intestinal Tract."

Dr. Gregory E. Stanbro, Oklahoma City: "The Diagnosis and Treatment of Acute Intestinal Obstruction."

Dr. Cyril E. Clymer, Oklahoma City: "The Treatment of Acute Cholecystitis: Immediate or Delayed Operation."

Dr. Oscar R. White, Oklahoma City: "Treatment of the Perforated Appendix."

Dr. Dan R. Sewell, Oklahoma City: "The Origin and Treatment of Subphrenic Infections."

Dr. Raymond L. Murdoch, Oklahoma City: "Lesions of the Colon" (X-Rays and Lantern Slides).

Dr. Harry Wilkins, Oklahoma City: "The Relation of Certain Gastro-Intestinal Complaints to Intracranial Disease" (Lantern Slides).

Dr. William E. Eastland, Oklahoma City: "X-Ray Therapy in Malignancy of the Breast."

Dr. John F. Burton, Oklahoma City: "The Role of Plastic Surgery in the Treatment of Malignancies about the Face" (Lantern Slides).

Dr. John P. Wolff, Oklahoma City: "Surgical Procedure in Operating Pilonidal Cysts" (Motion Pictures).

The Session then adjourned *sine die*.

GENERAL CLINICAL SESSION

OKLAHOMA CITY DAY

Tuesday, November 15, 2:00 p. m.

A Clinical Session, GYNECOLOGY and OBSTETRICS, was held in the Municipal Auditorium, Room No. 3, Oklahoma City, Dr. E. P. Allen, Oklahoma City, presiding.

The following presentations were made:

Gynecology

Dr. Joseph W. Kelso, Oklahoma City: "Treatment of Functional Menstrual Disturbances."

Dr. Grider Penick, Oklahoma City: "Widespread Misuse of Endocrine Products in the Treatment of Gynecological Symptoms."

Dr. John F. Kuhn, Sr., Oklahoma City: "Broad Ligament Pain."

Dr. Hugh Jones, Oklahoma City: "Trichomonas Vaginalis Vaginitis."

Dr. Wendell Long, Oklahoma City: "Endometriosis."

Dr. Gerald Rogers, Oklahoma City: "Sterility" (Lantern Slides).

Dr. LeRoy H. Sadler, Oklahoma City: "Congenital Absence of the Vagina" (Lantern Slides).

Obstetrics

Dr. Walter W. Wells, Oklahoma City: "Hemorrhage in Pregnancy" (Lantern Slides).

Dr. Onis George Hazel, Oklahoma City: "Syphilis in Pregnancy."

Dr. Dick Lowry, Oklahoma City: "Clinical Analysis of One Hundred and Forty Cases of Convulsive Eclampsia" (Lantern Slides).

Dr. J. B. Eskridge, Oklahoma City: "Blood Studies in Pregnancy: Report of One Thousand Consecutive Cases."

Dr. F. A. DeMand, Oklahoma City: "Infections in Pregnancy."

Dr. Floyd Gray, Oklahoma City: "Vitamin B_1 Deficiencies in Pregnancy."

Dr. George S. Mechling, Oklahoma City: "Analgesia and Anesthesia in Labor."

The Session then adjourned *sine die*.

GENERAL CLINICAL SESSION

OKLAHOMA CITY DAY

Tuesday, November 15, 2:00 p. m.

A Clinical Session, OPHTHALMOLOGY and OTOLARYNGOLOGY, was held in the Municipal Auditorium, Room No. 6, Oklahoma City, Dr. Leo F. Cailey, Oklahoma City, presiding.

The following presentations were made:

Otolaryngology

Dr. L. Chester McHenry, Oklahoma City: "One Hundred and Forty-Five Cases of Foreign Body of the Air and Food Passages."

Dr. Fred B. Hicks, Oklahoma City: "Conservative Treatment of Chronic Otitis Media."

Dr. W. M. Mussil, Oklahoma City: "Management of Acute Cellulitis of Jaw and Neck."

Dr. J. C. Macdonald, Oklahoma City: "Diagnosis and Treatment of Croup."

Dr. Theodore G. Wails, Oklahoma City: "Radical Versus Conservative Management of Acute Osteomyelitis of Frontal Bone."

Dr. William L. Bonham, Oklahoma City: "The Status of the Audiometer at the Present Time."

Dr. R. O. Early, Oklahoma City: "Practical Malingering Tests for Hearing."

Ophthalmology

Dr. J. P. McGee, Oklahoma City: "Ocular Manifestations of Systemic Disease."

Dr. L. M. Westfall, Oklahoma City: "The Treatment of Eye Trauma."

Dr. James R. Reed, Oklahoma City: "The Modern Management of Retinal Detachment."

Dr. E. S. Ferguson, Oklahoma City: "The Treatment of Complications of Cataract Extraction."

Dr. F. Maxey Cooper, Oklahoma City: "The Value of Orthoptic Training in the Heterophorias and Heterotropias."

Dr. J. J. Caviness, Oklahoma City: "Surgery of Extra-Ocular Muscles."

The Session then adjourned *sine die*.

GENERAL CLINICAL SESSION

Wednesday, November 16, 9:00 a. m.

A Clinical Session was held in the Municipal Auditorium, Room No. 1, Oklahoma City, the President, Dr. J. W. Jervey, Greenville, South Carolina, presiding.

The following presentations were made:

Dr. Ben R. Heninger, New Orleans, Louisiana: "The Exercise Tolerance Test (Master and Oppenheimer) in the Estimation of the Capacity of the Diseased Heart" (Lantern Slides).

Dr. Lay Martin, Baltimore, Maryland: "The Importance and the Widespread Distribution of the Psychogenic Basis of Gastro-Intestinal Symptoms; the Need for Recognition and Adequate Treatment of this Etiological Factor."

Dr. Tom D. Spies, Cincinnati, Ohio, Dr. Robert E. Stone, Chapel Hill, North Carolina, Jean M. Grant, Cincinnati, Ohio, and Dr. James B. McLester, Birmingham, Alabama: "Recent Observations on the Treatment of Six Hundred Pellagrins with Special Emphasis on the Use of Nicotinic Acid in Prophylaxis" (Lantern Slides), read by Dr. McLester.

Dr. Fred W. Rankin, Lexington, Kentucky: "The One-Stage Combined Abdomino-Perineal Resection of the Rectum for Cancer" (Motion Picture with Sound).

Dr. Edgar G. Ballenger, Atlanta, Georgia: "The Relationship of Obstructive Lesion to Resistant Urinary Infections."

Dr. Charles L. Martin, Dallas, Texas: "The Value of Tumor Clinics" (Lantern Slides).

The Session then adjourned *sine die*.

SECTION ON MEDICINE

Officers

Chairman—Dr. John B. Youmans, Nashville, Tennessee.
Vice-Chairman—Dr. Randolph Lyons, New Orleans, Louisiana.
Secretary—Dr. Henry G. Rudner, Memphis, Tennessee.

Wednesday, November 16, 9:30 a. m.

Joint session of the American Society of Tropical Medicine for a symposium on "Newer Clinical Aspects of Deficiency Diseases." See minutes of the American Society of Tropical Medicine, page 118.

Wednesday, November 16, 2:00 p. m.

The Section met in the Municipal Auditorium, Room No. 1, Oklahoma City, Oklahoma, and was called to order by the Chairman, Dr. John B. Youmans, Nashville, Tennessee, who presided.

Dr. Neuton S. Stern, Memphis, Tennessee, read a paper entitled "Arteriosclerosis: Considerations as to Etiology," which was discussed by Dr. Lewellys F. Barker, Baltimore, Maryland; and Dr. Morris M. Weiss, Louisville, Kentucky (discussion was read by Dr. Chauncey W. Dowden, Louisville, Kentucky, in the absence of Dr. Weiss).

Paper by Dr. George Herrmann and Dr. Geo. M. Decherd, Galveston, Texas, entitled "Coronary Thrombosis: Diagnosis and Treatment," was read by Dr. C. T. Stone, Galveston, Texas, and was discussed by Dr. Graham Asher, Kansas City, Missouri; Dr. Joseph B. Hirsch, Birmingham, Alabama; and Dr. Ben R. Heninger, New Orleans, Louisiana.

Dr. Russell L. Haden, Cleveland, Ohio, read a paper entitled "The Treatment of Rheumatoid Arthritis" (Lantern Slides).

Dr. Seale Harris, Jr., Birmingham, Alabama, read a paper entitled "A Simplified High Carbohydrate Diet in Diabetes Mellitus" (Lantern Slides), which was discussed by Dr. W. W. Rucks, Jr., Oklahoma City, Oklahoma; and Dr. Arthur A. Herold, Shreveport, Louisiana.

Dr. Frederic G. Dorwart, Muskogee, Oklahoma, read a paper entitled "Occurrences in the Chest Following Operations with Especial Reference to Pneumothoraces" (Lantern Slides), which was discussed by Dr. Paul H. Ringer, Asheville, North Carolina; and Dr. Lewis J. Moorman, Oklahoma City, Oklahoma.

Dr. Virgil E. Simpson, Louisville, Kentucky, read a paper entitled "'Force Fluids:' An Evaluation of the Indications and Contraindications for Fluids in Disease" (Lantern Slides), which was discussed by Dr. Chauncey W. Dowden, Louisville, Kentucky; and Dr. Thomas P. Sprunt, Baltimore, Maryland.

The Chairman appointed the following Nominating Committee: Dr. Chauncey W. Dowden, Louisville, Kentucky; Dr. Lea A. Riely, Oklahoma City, Oklahoma; and Dr. Thomas P. Sprunt, Baltimore, Maryland.

The session then adjourned until 2:00 p. m. Thursday.

Thursday, November 17, 2:00 p. m.

The Section met in the Municipal Auditorium, Room No. 1, Oklahoma City, Oklahoma, and was called to order by the Chairman, Dr. Youmans, who presided.

Dr. Oliver C. Melson, Little Rock, Arkansas, read a paper entitled "Some Medical Aspects of Chronic Gallbladder Disease," which was discussed by Dr. Randolph Lyons, New Orleans, Louisiana; and Dr. James E. Knighton, Shreveport, Louisiana.

Paper by Dr. Paul F. Stookey and Dr. Louis A. Scarpellino, Kansas City, Missouri, entitled "Staphylococcus Septicemia" (Lantern Slides), was read by Dr. Stookey and was discussed by Dr. R. Harrison Rigdon, Nashville, Tennessee; Dr. Gilbert J. Levy, Memphis, Tennessee; and Dr. Arthur A. Herold, Shreveport, Louisiana.

Dr. John B. Youmans, Nashville, Tennessee, read his Chairman's Address entitled "Postgraduate Medical Education in the South and the Contribution of the Southern Medical Association."

Dr. Royall M. Calder, San Antonio, Texas, read a paper entitled "Chronic Brucellosis," which was discussed by Dr. Lea A. Riely, Oklahoma City, Oklahoma; Dr. Henry C. Ricks, Jackson, Mississippi; and Dr. James E. Knighton, Shreveport, Louisiana.

Dr. Roy Lyman Sexton, Washington, D. C., read a paper entitled "The Clinical Significance of Blood Cholesterol Determination" (Lantern Slides), which was discussed by Dr. Edgar Jones, Nashville, Tennessee.

Paper by Dr. David Sacks and Dr. Lee Rice, San Antonio, Texas, entitled "Lobar Pneumonia" (Lantern Slides), was read by Dr. Sacks and was discussed by Dr. Lee Rice, San Antonio, Texas; and Dr. M. Pinson Neal, Columbia, Missouri.

The Nominating Committee reported the following nominations for Section officers, the nominees being duly elected by vote of the Section:

Chairman—Dr. Virgil E. Simpson, Louisville, Kentucky.
Vice-Chairman—Dr. Hugh Jeter, Oklahoma City, Oklahoma.
Secretary—Dr. Henry G. Rudner, Memphis, Tennessee.

The Section then adjourned *sine die*.

SECTION ON PEDIATRICS

Officers

Chairman—Dr. Charles E. Conrad, Harrisonburg, Virginia.
Vice-Chairman—Dr. John Signorelli, New Orleans, Louisiana.
Secretary—Dr. Hughes Kennedy, Jr., Birmingham, Alabama.

Thursday, November 17, 9:00 a. m.

The Section met in the Municipal Auditorium, Room No. 1, Oklahoma City, Oklahoma, and was called to order by the Chairman, Dr. Charles E. Conrad, Harrisonburg, Virginia, who presided.

It was moved and carried that a telegram be sent by the Section to Dr. Eugene Rosamond, Memphis, Tennessee, a former Chairman of the Section, expressing sympathy on his recent accident.

Dr. Harold T. Nesbit, Dallas, Texas, read a paper entitled "Functional Nervous Imbalance in Childhood," which was discussed by Dr. Ruth G. Aleman, New Orleans, Louisiana; Dr. Carroll M. Pounders, Oklahoma City, Oklahoma; and in closing by the essayist.

Dr. Henry F. Helmholz, Rochester, Minnesota, read a paper entitled "The Role of Stasis and Infection in Childhood in Renal Insufficiency of Later Life" (Lantern Slides).

Dr. Charles E. Conrad, Harrisonburg, Virginia, read his Chairman's Address entitled "Congenital Tuberculosis: Review of the Literature with Report of a Case."

Paper by Dr. Harris Hosen, Port Arthur, Texas, and Dr. John Miles, Houston, Texas, entitled "The Relationship of Primary (Childhood) Tuberculosis and Non-Specific Respiratory Infection" (Lantern Slides), was read by Dr. Hosen and was discussed by Dr. Lewis J. Moorman, Oklahoma City, Oklahoma; Dr. Hugh Graham, Tulsa, Oklahoma; and in closing by Dr. Hosen.

Paper by Dr. D. C. Wharton Smith, Baltimore, Maryland, and Dr. Alexander J. Alexander, Lexington, Kentucky, entitled "Transient Lung Infiltration Associated with Eosinophilia: Report of a Case" (Lantern Slides), was read by Dr. Alexander and was discussed by Dr. Jerome S. Harris, Durham, North Carolina; Dr. Ralph Bowen, Oklahoma City, Oklahoma; and in closing by Dr. Alexander.

The Chairman appointed the following Nominating Committee: Dr. M. Hines Roberts, Atlanta, Georgia; Dr. Gilbert J. Levy, Memphis, Tennessee; and Dr. Lucius D. Hill, Jr., San Antonio, Texas.

Dr. Maurice Couret, New Orleans, Louisiana, read a paper entitled "Hemolytic Jaundice in the New Born" (Lantern Slides), which was discussed by Dr. Ben H. Nicholson, Oklahoma City, Oklahoma; and in closing by the essayist.

The Section then adjourned until 9:00 a. m. Friday.

Friday, November 18, 9:00 a. m.

The Section met in the Municipal Auditorium, Room No. 1, Oklahoma City, Oklahoma, and was called to order by the Chairman, Dr. Conrad, who presided.

Paper by Dr. Jean M. Martin and Dr. Jay M. Arena, Durham, North Carolina, entitled "Lye Poisoning and Stricture of the Esophagus: Report of Fifty Cases" (Lantern Slides), was read by Dr. Arena and was discussed by Dr. Murdock Equen, Atlanta, Georgia; and Dr. Porter P. Vinson, Richmond, Virginia.

Paper by Dr. Wallace Alexander Clyde and Dr. Martin Gillespie Neely, Fairfield, Alabama, entitled "Some Clinical Experiences in Treating Meningococcemia and Meningococcic Meningitis" (Lantern Slides), was read by Dr. Clyde and was discussed by Dr. Gilbert J. Levy, Memphis, Tennessee; and in closing by Dr. Clyde.

Dr. Horton Casparis, Nashville, Tennessee, read a paper entitled "The Outlook for Pediatrics," which was discussed by Dr. Oliver W. Hill, Knoxville, Tennessee; Dr. Lucile Spire Blachly, Oklahoma City, Oklahoma; Dr. D. Lesesne Smith, Spartanburg, South Carolina; and in closing by the essayist.

Dr. Frank C. Neff, Kansas City, Missouri, read a paper entitled "Hospital Exposure to the Common Contagious Diseases of Childhood" (Lantern Slides), which was discussed by Dr. M. Hines Roberts, Atlanta, Georgia; and in closing by the essayist.

Dr. Lucius D. Hill, Jr., San Antonio, Texas, read a paper entitled "X-Ray as an Aid in Diagnosis of Chronic Appendicitis" (Lantern Slides), which was discussed by Dr. William M. Taylor, Oklahoma City, Oklahoma; Dr. Charles L. Martin, Dallas, Texas; and in closing by the essayist.

Dr. Charles James Bloom, New Orleans, Louisiana, read a paper entitled "Spastic Colitis in Children," which was discussed by Dr. Harvey F. Garrison, Sr., Jackson, Mississippi; Dr. Clark H. Hall, Oklahoma City, Oklahoma; Dr. D. Lesesne Smith, Spartanburg, South Carolina; and in closing by the essayist.

The Nominating Committee reported the following nominations for the Section officers, the nominees being duly elected by vote of the Section:

Chairman—Dr. Hughes Kennedy, Jr., Birmingham, Alabama.
Vice-Chairman—Dr. Carroll M. Pounders, Oklahoma City, Oklahoma.
Secretary—Dr. Warren W. Quillian, Coral Gables, Florida.

The Section passed a resolution of thanks to the Oklahoma City pediatricians for their courtesy to the Section.

The Section then adjourned *sine die*.

SECTION ON GASTROENTEROLOGY

Officers

Chairman—Dr. A. L. Levin, New Orleans, Louisiana.
Vice-Chairman—Dr. Arthur W. White, Oklahoma City, Oklahoma.
Secretary—Dr. Lay Martin, Baltimore, Maryland.

Thursday, November 17, 9:00 a. m.

The Section met in the Municipal Auditorium, Room No. 2, Oklahoma City, Oklahoma, and was called to order by the Chairman, Dr. A. L. Levin, New Orleans, Louisiana, who read his Chairman's Address, entitled "Clinical Observations on Misbehavior Patterns of the Alimentary Tract" (Lantern Slides).

The Chairman appointed the following Nominating Committee: Dr. Lee Rice, San Antonio, Texas; Dr. C. J. Fishman, Oklahoma City, Oklahoma; and Dr. Arthur A. Herold, Shreveport, Louisiana.

Dr. J. A. Bargen, Rochester, Minnesota, read a paper entitled "Causes of Colonic Cancer: Clinical Support of Current Hypotheses" (Lantern Slides).

Paper by Dr. James Reagan Simms, Jr., and Dr. John C. Culley, Oxford, Mississippi, entitled "Gastro-Intestinal Manifestations of Pelvic Inflammatory Disease," was read by Dr. Simms, and was discussed by Dr. W. T. Black, Memphis, Tennessee; Dr. C. J. Fishman, Oklahoma City, Oklahoma; and in closing by Dr. Simms.

Dr. James L. Borland, Jacksonville, Florida, read a paper entitled "The Incidence of Intestinal Protozoa in Florida," which was discussed by Dr. Justin Andrews, Baltimore, Maryland; and Dr. Jerome S. Levy, Little Rock, Arkansas.

Paper by Dr. Donovan C. Browne and Dr. Gordon McHardy, New Orleans, Louisiana, entitled "Prognosis of Peptic Ulcer" (Lantern Slides), was read by Dr. Browne and was discussed by Dr. Seale Harris, Jr., Birmingham, Alabama; Dr. Arthur A. Herold, Shreveport, Louisiana; and Dr. Arthur W. White, Oklahoma City, Oklahoma.

Paper by Dr. Julian M. Ruffin and Dr. David T. Smith, Durham, North Carolina, entitled "Recent Advances in the Treatment of Pellagra with Special Reference to the Use of Nicotinic Acid" (Lantern Slides and Motion Pictures), was read by Dr. Ruffin and was discussed by Dr. William Bennett Bean, Cincinnati, Ohio; and Dr. Lay Martin, Baltimore, Maryland.

The Nominating Committee reported the following nominations for Section officers, the nominees being duly elected by vote of the Section:

Chairman—Dr. Lay Martin, Baltimore, Maryland.
Vice-Chairman—Dr. Jerome S. Levy, Little Rock, Arkansas.
Secretary—Dr. Donovan C. Browne, New Orleans, Louisiana.

The Section then adjourned *sine die*.

SECTION ON PATHOLOGY

Officers

Chairman—Dr. Everett L. Bishop, Atlanta, Georgia.
Vice-Chairman—Dr. Elizabeth Bass, New Orleans, Louisiana.
Secretary—Dr. Roy R. Kracke, Emory University, Georgia.

Wednesday, November 16, 2:00 p. m.

The Section met in the Municipal Auditorium, Room No. 9, Oklahoma City, Oklahoma, and was called to order by the Chairman, Dr. Everett L. Bishop, Atlanta, Georgia, who read his Chairman's Address, entitled "Cancer, Trauma, and Compensation" (Lantern Slides).

Paper by Dr. C. E. Gillespie and Dr. Harry C. Schmeisser, Memphis, Tennessee, entitled "Mucoid Carcinoma of the Breast" (Lantern Slides), was read by Dr. Gillespie and was discussed by Dr. William H. Bailey, Oklahoma City, Oklahoma; and in closing by Dr. Schmeisser.

Dr. Oscar B. Hunter, Washington, D. C., read a paper entitled "Further Observations on the Schiller Presumptive Test for Carcinoma of the Cervix" (Lantern Slides), which was discussed by Dr. Wayne M. Hull, Oklahoma City, Oklahoma; and in closing by the essayist.

Paper by Dr. Herbert John Schattenberg and Dr. William Herbert Harris, New Orleans, Louisiana, entitled "The Pathology of Granulosa Cell, Arrhenoblastoma, Dysgerminoma and Brenner Tumors of the Ovary" (Lantern Slides), was read by Dr. Schattenberg and was discussed by Dr. I. A. Nelson, Tulsa, Oklahoma; Dr. L. A. Turley, Oklahoma City, Oklahoma; Dr. Harry C. Schmeisser, Memphis, Tennessee; Dr. Fred H. Krock, Fort Smith, Arkansas; and in closing by Dr. Schattenberg.

Dr. Jack C. Norris, Atlanta, Georgia, read a paper entitled "Rupture of the Aorta Contrasted with Rupture of the Aortic Valve Cusp" (Lantern Slides), which was discussed by Dr. M. Pinson Neal, Columbia, Missouri; Dr. Seaborn J. Lewis, Beaumont, Texas; and in closing by the essayist.

Paper by Dr. Rigney D'Aunoy, Dr. J. R. Schenken and Dr. E. L. Burns, New Orleans, Louisiana, entitled "The Relative Incidence of Hyperplasia of the Prostate in the White and Colored Races: A Study Based on the Pathology of Prostates Surgically Removed in the Charity Hospital at New Orleans" (Lantern Slides), was read by Dr. Schenken and was discussed by Dr. W. Floyd Keller, Oklahoma City, Oklahoma; and in closing by Dr. Schenken.

The Chairman appointed the following Nominating Committee: Dr. George T. Caldwell, Dallas, Texas; Dr. John A. Lanford, New Orleans, Louisiana; and Dr. Wiley D. Forbus, Durham, North Carolina.

The Section then adjourned until 2:00 p. m. Thursday.

Thursday, November 17, 2:00 p. m.

The Section met in the Municipal Auditorium, Room No. 9, Oklahoma City, Oklahoma, and was called to order by the Chairman, Dr. Bishop, who presided.

Dr. John C. Henthorne, Jackson, Mississippi, read a paper entitled "Granuloma Venereum" (Lantern Slides), which was discussed by Dr. Lawrence W. Long, Jackson, Mississippi; Dr. John L. Jelks, Memphis, Tennessee; Dr. Harry C. Schmeisser, Memphis, Tennessee; Dr. John A. Lanford, New Orleans, Louisiana; and in closing by the essayist.

Dr. Clyde Brooks, New Orleans, Louisiana, read a paper entitled "On the Chemistry and Pharmacology of Split Fibrin" (Lantern Slides), which was discussed by Dr. Jack C. Norris, Atlanta, Georgia; and in closing by the essayist.

Paper by Dr. Charles W. Duval, New Orleans, Louisiana, entitled "Animal Experiments which Further Support the Etiological Relationship of the Cultivated Chromogenic Acid Fast Bacillus to Human Leprosy," was read by title.

Paper by Dr. P. B. Parsons and Mary A. Poston, Durham, North Carolina, entitled "The Pathology of Human Brucellosis" (Lantern Slides), was read by Dr. Parsons and was discussed by Dr. Roy R. Kracke, Emory University, Georgia; Dr. Wiley D. Forbus, Durham, North Carolina; Dr. J. R. Schenken, New Orleans, Louisiana; and in closing by Dr. Parsons.

Dr. R. H. Rigdon, Nashville, Tennessee, read a paper entitled "Some of the Experimental Lesions Produced by Staphylococcus Toxin" (Lantern Slides), which was discussed by Dr. Wiley D. Forbus, Durham, North Carolina; Dr. Russell W. Kerr, Kansas City, Missouri; and in closing by the essayist.

The Nominating Committee reported the following nominations for Section officers, the nominees being duly elected by vote of the Section:

Chairman—Dr. Elizabeth Bass, New Orleans, Louisiana.
Vice-Chairman—Dr. Roy R. Kracke, Emory University, Georgia.
Secretary—Dr. R. H. Rigdon, Nashville, Tennessee.

Dr. Harry C. Schmeisser, Memphis, Tennessee, extended an invitation to the members of the Section to convene at Memphis as the guest of the Pathological Institute of the University of Tennessee School of Medicine for a one day clinical session the day preceding the Southern Medical Association meeting. The invitation was accepted with thanks.

A resolution of sympathy on the death of Dr. Howard Anderson McCordock, Professor of Pathology, Washington University School of Medicine, St. Louis, Missouri, was ordered prepared and transmitted to the family.

The Section then adjourned *sine die*.

SECTION ON NEUROLOGY AND PSYCHIATRY

Officers

Chairman—Dr. Frank H. Luton, Nashville, Tennessee.
Vice-Chairman—Dr. H. Dawson Allen, Jr., Milledgeville, Georgia.
Secretary—Dr. S. Spafford Ackerly, Louisville, Kentucky.

Thursday, November 17, 9:00 a. m.

The Section met in the Municipal Auditorium, Room No. 3, Oklahoma City, Oklahoma, and was called to order by the Chairman, Dr. Frank H. Luton, Nashville, Tennessee, who presided.

Paper by Dr. Robert V. Seliger, Baltimore, Maryland, entitled "Recent Psychological Approaches to Patients with Alcohol Problems," was read by Dr. Theodore A. Watters, New Orleans, Louisiana, in the absence of the essayist, and was discussed by Dr. Arthur J. Schwenkenberg, Dallas, Texas; Dr. G. Wilse Robinson, Jr., Kansas City, Missouri; and Dr. James A. Willie, Oklahoma City, Oklahoma.

Paper by Dr. Lewis Barbato and Dr. Stephan Weisz, Galveston, Texas, entitled "Experiences with Sleep Treatment" (Lantern Slides), was read by Dr. Barbato and was discussed by Dr. Theodore A. Watters, New Orleans, Louisiana; Dr. L. M. Rogers, Lexington, Kentucky; Dr. Giles W. Day, Fort Worth, Texas; Dr. Guy F. Witt, Dallas, Texas; and in closing by Dr. Weisz.

Dr. Frank H. Luton, Nashville, Tennessee, read his Chairman's Address, entitled "Rural Psychiatry."

Dr. Robert Emmet Britt, St. Louis, Missouri, read a paper entitled "The Psychiatrist in the General Hospital," which was discussed by Dr. H. H. McClellan, San Antonio, Texas; Dr. Giles W. Day, Fort Worth, Texas; Dr. Richard Wilson, Atlanta, Georgia; and Dr. H. Randolph Unsworth, New Orleans, Louisiana.

Dr. H. Randolph Unsworth, New Orleans, Louisiana, read a paper entitled "A Neurological Problem, Therapeutically," which was discussed by Dr. Tom H. Cheavens, Dallas, Texas; Dr. Paul White, Austin, Texas; and Dr. Theodore A. Watters, New Orleans, Louisiana.

The Chairman appointed the following Nominating Committee: Dr. Harry Wilkins, Oklahoma City, Oklahoma; Dr. Richard Wilson, Atlanta, Georgia; and Dr. Raymond S. Crispell, Durham, North Carolina.

The Section then adjourned until 9:00 a. m. Friday.

Friday, November 18, 9:00 a. m.

The Section met in the Municipal Auditorium, Room No. 3, Oklahoma City, Oklahoma, and was called to order by the Chairman, Dr. Luton, who presided.

Dr. Raymond Crispell, Durham, North Carolina, read a paper entitled "Some Considerations Concerning Congenital Neuropsychiatric Disorders," which was discussed by Dr. Coyne H. Campbell, Oklahoma City, Oklahoma; Dr. Harry Wilkins, Oklahoma City, Oklahoma; and Dr. Tom H. Cheavens, Dallas, Texas.

Dr. Leonard T. Furlow, St. Louis, Missouri, read a paper entitled "Chronic Subdural Hematoma: Its Importance to the Neurologist, the Psychiatrist and the Surgeon" (Lantern Slides), which was discussed by Dr. J. G. Lyerly, Jacksonville, Florida; Dr. R. Eustace Semmes, Memphis, Tennessee; and Dr. James A. Willie, Oklahoma City, Oklahoma.

Dr. William C. Menninger, Topeka, Kansas, read a paper entitled "Psychoanalytic Principles in Psychiatric Hospital Therapy."

Dr. Richard Wilson, Atlanta, Georgia, read a paper entitled "Acute Arteriolitis of the Brain and Spinal Cord" (Lantern Slides), which was discussed by Dr. R. F. Slaughter, Augusta, Georgia; Dr. R. Glen Spurling, Louisville, Kentucky; and Dr. Raymond Crispell, Durham, North Carolina.

Dr. G. Wilse Robinson, Jr., Kansas City, Missouri, read a paper entitled "Acute Confusional States of Old Age: Their Interpretation and Treatment," which was discussed by Dr. Robert H. Felix, Lexington, Kentucky.

The Nominating Committee reported the following nominations for Section officers, the nominees being duly elected by vote of the Section:

Chairman—Dr. H. Dawson Allen, Jr., Milledgeville, Georgia.
Vice-Chairman—Dr. S. Spafford Ackerly, Louisville, Kentucky.
Secretary—Dr. Theodore A. Watters, New Orleans, Louisiana.

The Section then adjourned *sine die*.

SECTION ON RADIOLOGY

Officers

Chairman—Dr. Ira H. Lockwood, Kansas City, Missouri.
Vice-Chairman—Dr. Roy G. Giles, San Antonio, Texas.
Secretary—Dr. Ralph E. Myers, Oklahoma City, Oklahoma.

Wednesday, November 16, 2:00 p. m.

The Section met in the Municipal Auditorium, Room No. 4, Oklahoma City, Oklahoma, and was called to order by the Chairman, Dr. Ira H. Lockwood, Kansas City, Missouri, who read his Chairman's Address entitled "Primary Bronchus' Carcinoma" (Lantern Slides).

Paper by Dr. Wendell G. Scott and Dr. Sherwood Moore, St. Louis, Missouri, entitled "The Roentgen Treatment of Carcinoma of the Larynx and Hypo-Pharynx" (Lantern Slides), was read by Dr. Scott and was discussed by Dr. Charles L. Martin, Dallas, Texas.

Dr. Fred M. Hodges, Richmond, Virginia, read a paper entitled "Intravenous Urography" (Lantern Slides), which was discussed by Dr. E. C. Ernst, St. Louis, Missouri.

Dr. George A. Stewart, Baltimore, Maryland, read a paper entitled "Irradiation and Surgery in the Treatment of Carcinoma of the Breast" (Lantern Slides), which was discussed by Dr. Wright Clarkson, Petersburg, Virginia; Dr. Leonard A. Myers, Houston, Texas; Dr. Vincent W. Archer, Charlottesville, Virginia; Dr. Charles L. Martin, Dallas, Texas; Dr. Claude J. Hunt, Kansas City, Missouri; and in closing by the essayist.

The Chairman appointed the following Nominating Committee: Dr. Fred M. Hodges, Richmond, Virginia; Dr. Franklin B. Bogart, Chattanooga, Tennessee; and Dr. Wm. E. Eastland, Oklahoma City, Oklahoma.

Dr. Harold G. F. Edwards, Shreveport, Louisiana, read a paper entitled "Metastatic Cancer in Neck Nodes" (Lantern Slides), which was discussed by Dr. Wm. E. Eastland, Oklahoma City, Oklahoma; Dr. Charles L. Martin, Dallas, Texas; Dr. Wm. R. Matthews, Shreveport, Louisiana; and in closing by the essayist.

Dr. L. E. Sorrell, Birmingham, Alabama, read a paper entitled "Myxochondrosarcoma (Osteochondrosarcoma)" (Lantern Slides), which was discussed by Dr. Alfred J. Ackermann, Oklahoma City, Oklahoma; and Dr. L. S. McAlister, Muskogee, Oklahoma.

The Section then adjourned until 2:00 p. m. Thursday.

Thursday, November 17, 2:00 p. m.

The Section met in the Municipal Auditorium, Room No. 3, Oklahoma City, Oklahoma, and was called to order by the Chairman, Dr. Lockwood, who presided.

Dr. B. R. Kirklin, Rochester, Minnesota, read a paper entitled "The Present Status of Cholecystography" (Lantern Slides).

Dr. Franklin B. Bogart, Chattanooga, Tennessee, read a paper entitled "Radiation Therapy in Ovarian Dysfunction," which was discussed by Dr. D. Y. Keith, Louisville, Kentucky; Dr. C. P. Rutledge, Shreveport, Louisiana; and in closing by the essayist.

Paper by Dr. Jesse B. Johnson, Dr. Fred Y. Kuhlman and Dr. Harold M. Anspach, Galveston, Texas, entitled "Early Diagnosis of Lesions about the Hip Joint" (Lantern Slides), was read by Dr. Johnson and was discussed by Dr. E. Lachman, Oklahoma City, Oklahoma; and in closing by Dr. Johnson.

The Nominating Committee reported the following nominations for Section officers, the nominees being duly elected by vote of the Section:

Chairman—Dr. Charles L. Martin, Dallas, Texas.
Vice-Chairman—Dr. Wendell G. Scott, St. Louis, Missouri.
Secretary—Dr. Ralph E. Myers, Oklahoma City, Oklahoma.

Dr. Charles H. Peterson, Roanoke, Virginia, read a paper entitled "Roentgen Ray Studies of Mediastinal Tumors" (Lantern Slides), which was discussed by Dr. C. P. Rutledge, Shreveport, Louisiana; and Dr. Charles L. Martin, Dallas, Texas.

Paper by Dr. J. Cash King and Dr. W. W. Brandes, Memphis, Tennessee, entitled "Carcinoma of the Cervix Uteri: Tissue Changes During and Following Irradiation Therapy" (Lantern Slides), was read by Dr. King and was discussed by Dr. E. D. Greenberger, McAlester, Oklahoma; Dr. R. P. O'Bannon, Fort Worth, Texas; and in closing by the essayist.

Paper by Dr. Vincent W. Archer and Dr. George Cooper, Jr., University, Virginia, entitled "Prolapse of the Gastric Mucosa" (Lantern Slides), was read by Dr. Archer and was discussed by Dr. John E. Heatley, Oklahoma City, Oklahoma.

The Section then adjourned *sine die*.

SECTION ON DERMATOLOGY AND SYPHILOLOGY

Officers

Chairman—Dr. M. Toulmin Gaines, Mobile, Alabama.
Vice-Chairman—Dr. Howard King, Nashville, Tennessee.
Secretary—Dr. Clinton W. Lane, St. Louis, Missouri.

Thursday, November 17, 9:00 a. m.

The Section met in the Municipal Auditorium, Room No. 6, Oklahoma City, Oklahoma, and was called to order by the Chairman, Dr. M. Toulmin Gaines, Mobile, Alabama, who read his Chairman's Address, entitled "A Review of Some of the Histogenetic Relationships of the Skin."

Paper by Dr. Jack W. Jones and Dr. Herbert S. Alden, Atlanta, Georgia, entitled "Tuberculosis and Tuberculids," was read by Dr. Alden and was discussed by Dr. Frederick D. Weidman, Philadelphia, Pennsylvania; Dr. Howard King, Nashville, Tennessee; Dr. Leslie M. Smith, El Paso, Texas; Dr. M. Toulmin Gaines, Mobile, Alabama; and in closing by Dr. Alden.

Dr. H. Ford Anderson, Washington, D. C., read a paper entitled "Colon Bacillus Infection of the Hand" (Lantern Slides), which was discussed by Dr. John H. Lamb, Oklahoma City, Oklahoma; and in closing by the essayist.

Paper by Dr. C. F. Lehmann and Dr. J. L. Pipkin, San Antonio, Texas, entitled "Pustular Perichondritis of the Ears," was read by Dr. Lehmann and was discussed by Dr. W. A. Showman, Tulsa, Oklahoma; Dr. John H. Lamb, Oklahoma City, Oklahoma; Dr. Howard King, Nashville, Tennessee; and in closing by Dr. Lehmann.

Dr. A. H. Lancaster, Knoxville, Tennessee, read a paper entitled "Estrogenic Hormone Therapy in Sunlight Eruptions of the Female," which was discussed by Dr. Charles O. King, Birmingham, Alabama; Dr. C. Edward Hollingsworth, Oklahoma City, Oklahoma; Dr. Howard King, Nashville, Tennessee; and in closing by the essayist.

Paper by Dr. Leslie M. Smith and Dr. Raymond P. Hughes, El Paso, Texas, entitled "Erythroplasia of Queyrat" (Lantern Slides), was read by Dr. Smith and was discussed by Dr. James R. Allison, Columbia, South Carolina; Dr. Herbert S. Alden, Atlanta, Georgia; Dr. Thomas B. Hall, Kansas City, Missouri; and in closing by Dr. Smith.

Dr. M. F. Engman, Jr., St. Louis, Missouri, read a paper entitled "Variant Forms of Pellagra," which was discussed by Dr. George L. Powers, Amarillo, Texas; Dr. C. F. Lehmann, San Antonio, Texas; Dr. Howard Hailey, Atlanta, Georgia; Dr. M. Toulmin Gaines, Mobile, Alabama; and in closing by the essayist.

The Section then adjourned until 9:00 a. m. Friday.

Friday, November 18, 9:00 a. m.

The Section met in the Municipal Auditorium, Room No. 6, Oklahoma City, Oklahoma, and was called to order by the Chairman, Dr. Gaines, who presided.

The Chairman appointed the following Nominating Committee: Dr. Everett S. Lain, Oklahoma City, Oklahoma; Dr. Thomas W. Murrell, Richmond, Virginia; and Dr. Harry M. Robinson, Baltimore, Maryland.

Dr. James K. Howles, New Orleans, Louisiana, read a paper entitled "The Study of Mapharsen in the Treatment of Congenital Syphilis" (Lantern Slides), which was discussed by Dr. Harry M. Robinson, Baltimore, Maryland; Dr. Elmo D. French, Miami, Florida; Dr. Norman Tobias, St. Louis, Missouri; and in closing by the essayist.

Paper by Dr. Dudley C. Smith and Dr. H. Page Newbill, Charlottesville, Virginia, entitled "Arsenical Encephalitis: Review and Report of Case with Autopsy," was read by Dr. Smith and was discussed by Dr. Daniel T. Gandy, Houston, Texas; Dr. Everett C. Fox, Dallas, Texas; Dr. Walter E. Vest, Huntington, West Virginia; Dr. Onis George Hazel, Oklahoma City, Oklahoma; Dr. G. E. Johnson, Ardmore, Oklahoma; Dr. Harry M. Robinson, Baltimore, Maryland; and in closing by Dr. Smith.

Paper by Dr. Thomas W. Murrell and Dr. R. Campbell Manson, Richmond, Virginia, entitled "Syphilis and Life Insurance," was read by Dr. Murrell and was discussed by Dr. G. E. Johnson, Ardmore, Oklahoma; Dr. Everett C. Fox, Dallas, Texas; Dr. James K. Howles, New Orleans, Louisiana; Dr. Job H. Crooks, Greenville, South Carolina; and in closing by Dr. Murrell.

Paper by Dr. Emmett R. Hall and Dr. V. A. Hall, Memphis, Tennessee, entitled "Purpura Annularis Telangiectodes," was read by title.

Paper by Dr. Charles C. Dennie and Dr. Harry M. Gilkey, Kansas City, Missouri, entitled "Rat Bite Fever in Children," was read by Dr. Gilkey and was discussed by Dr. J. Stevenson, Tulsa, Oklahoma; Dr. Thomas W. Murrell, Richmond, Virginia; and in closing by Dr. Gilkey.

Dr. Thomas B. Hall, Kansas City, Missouri, read a paper entitled "Vegetative Dermatoses in the Negro" (Lantern Slides), which was discussed by Dr. M. T. Van Studdiford, New Orleans, Louisiana.

Dr. Norman Tobias, St. Louis, Missouri, read a paper entitled "Experience with Fluorescin in the Treatment of Psoriasis" (Lantern Slides), which was discussed by Dr. James G. Thompson, Jackson, Mississippi; Dr. George Price Lingenfelter, Denver, Colorado; Dr. Clinton W. Lane, St. Louis, Missouri; Dr. Job H. Crooks, Greenville, South Carolina; and in closing by the essayist.

The Nominating Committee reported the following nominations for Section officers, the nominees being duly elected by vote of the Section:

Chairman—Dr. James R. Allison, Columbia, South Carolina.
Vice-Chairman—Dr. A. H. Lancaster, Knoxville, Tennessee.
Secretary—Dr. Clinton W. Lane, St. Louis, Missouri.

The Section then adjourned *sine die*.

SECTION ON ALLERGY

Officers

Chairman—Dr. Oscar Swineford, Jr., Charlottesville, Virginia.
Vice-Chairman—Dr. Charles H. Eyermann, St. Louis, Missouri.
Secretary—Dr. E. Rankin Denny, Tulsa, Oklahoma.

Friday, November 18, 9:00 a. m.

The Section met at the Municipal Auditorium, Room No. 9, Oklahoma City, Oklahoma, and was called to order by the Chairman, Dr. Oscar W. Swineford, Jr., Charlottesville, Virginia, who presided.

The Chairman appointed the following Nominating Committee: Dr. Charles H. Eyermann, St. Louis, Missouri; Dr. Orval R. Withers, Kansas City, Missouri; and Dr. E. Rankin Denny, Oklahoma City, Oklahoma.

Paper by Dr. Armand E. Cohen and Dr. Frank A. Simon, Louisville, Kentucky, entitled "The Treatment of Allergic Conditions with Histaminase (T. 360)" was read by Dr. Cohen and was discussed by Dr. Maison I. Lowance, Atlanta, Georgia; Dr. Ralph Bowen, Oklahoma City, Oklahoma; Dr. Samuel M. Feinberg, Chicago, Illinois; Dr. J. Harvey Black, Dallas, Texas; Dr. C. Malone Stroud, St. Louis, Missouri; and in closing by Dr. Cohen.

Dr. Leo H. Criep, Pittsburgh, Pennsylvania, read a paper entitled "The Value of Iodized Oil in the Treatment of Bronchial Asthma" (Lantern Slides).

Paper by Dr. Joseph Amoz[illegible]utia, S. J., and Dr. French K. Hansel, St. Louis, Missouri, entitled "Transformation of Various Types of Leukocytes into Eosinophils: A Simple Test Tube Method," was read by Dr. Hansel, and was discussed by Dr. I. S. Kahn, San Antonio, Texas; Dr. Samuel M. Feinberg, Chicago, Illinois; Dr. J. Harvey Black, Dallas, Texas; Dr. C. Malone Stroud, St. Louis, Missouri; and in closing by Dr. Hansel.

Dr. Homer E. Prince, Houston, Texas, read a paper entitled "Non-Pollen Factors Simulating Seasonal Respiratory Allergy," which was discussed by Dr. J. Harvey Black, Dallas, Texas; and in closing by the essayist.

Paper by Dr. John S. Agar and Dr. Alan Cazort, Little Rock, Arkansas, entitled "Pathological Nasal Conditions Affecting Clinical Allergy," was read by Dr. Agar and was discussed by Dr. French K. Hansel, St. Louis, Missouri; and in closing by Dr. Agar.

Dr. Orval R. Withers, Kansas City, Missouri, read a paper entitled "Gastro-Intestinal Allergy with Special Reference to the Esophagus," which was discussed by Dr. Oscar Swineford, Jr., Charlottesville, Virginia; Dr. Homer E. Prince, Houston, Texas; Dr. Samuel M. Feinberg, Chicago, Illinois; and in closing by the essayist.

The Nominating Committee reported the following nominations for Section officers, the nominees being duly elected by vote of the Section:

Chairman—Dr. Charles H. Eyermann, St. Louis, Missouri.
Vice-Chairman—Dr. Homer E. Prince, Houston, Texas.
Secretary—Dr. E. Rankin Denny, Tulsa, Oklahoma.

The Nominating Committee recommended that it be the custom of the Section for the Secretary to serve two years and for the Vice-Chairman to become Chairman. The recommendation was adopted unanimously.

The Section then adjourned *sine die*.

SECTION ON SURGERY

Officers

Chairman—Dr. Charles S. Venable, San Antonio, Texas.
Vice-Chairman—Dr. Carrington Williams, Richmond, Virginia.
Secretary—Dr. J. M. T. Finney, Jr., Baltimore, Maryland.

Thursday, November 17, 9:00 a. m.

The Section met in the Municipal Auditorium, Room No. 5, Oklahoma City, Oklahoma, and was called to order by the Chairman, Dr. Charles S. Venable, San Antonio, Texas, who presided.

Dr. D. C. Donald, Birmingham, Alabama, read a paper entitled "Undescended Testes, with Special Reference to Torek's Method of Orchiopexy" (Lantern Slides), which was discussed by Dr. Robert Lee Sanders, Memphis, Tennessee; Dr. Samuel L. Ledbetter, Jr., Birmingham, Alabama; and in closing by the essayist.

Dr. Lawrence W. Long, Jackson, Mississippi, read a paper entitled "Wilms' Tumors, Embryomata of the Kidney: Report of Four Cases," which was discussed by Dr. Basil A. Hayes, Oklahoma City, Oklahoma; Dr. Russell A. Hennessey, Memphis, Tennessee; and in closing by the essayist.

Dr. Beverly Douglas, Nashville, Tennessee, read a paper entitled "Advances in the Treatment of Everyday Wounds" (Lantern Slides), which was discussed by Dr. Amos R. Koontz, Baltimore, Maryland; Dr. Fred Y. Cronk, Tulsa, Oklahoma; Dr. LeRoy Long, Oklahoma City, Oklahoma; and in closing by the essayist.

Dr. John deJ. Pemberton, Rochester, Minnesota, read a paper entitled "Malignancy of the Thyroid Gland" (Lantern Slides).

Dr. Clarence E. Gardner, Jr., Durham, North Carolina, read a paper entitled "The Conservative Management of Appendical Peritonitis" (Lantern Slides), which was discussed by Dr. LeRoy Long, Oklahoma City, Oklahoma; Dr. J. A. Crisler, Jr., Memphis, Tennessee; Dr. Jere L. Crook, Jackson, Tennessee; Dr. M. Pinson Neal, Columbia, Missouri; Dr. Hugh A. Gamble, Greenville, Mississippi; and in closing by the essayist.

The Chairman appointed the following Nominating Committee: Dr. William P. Fite, Muskogee, Oklahoma; Dr. Richard J. White, Fort Worth, Texas; and Dr. Beverly Douglas, Nashville, Tennessee.

The Section then adjourned until 9:00 a. m. Friday.

Friday, November 18, 9:00 a. m.

SYMPOSIUM ON AUTOMOBILE INJURIES

The Section met in the Municipal Auditorium, Room No. 5, Oklahoma City, Oklahoma, and was called to order by the Chairman, Dr. Charles S. Venable, San Antonio, Texas, who read his Chairman's Address, entitled "General Aspects of Automobile Injuries."

Dr. James Barrett Brown, St. Louis, Missouri, read a paper entitled "The Management of Compound Injuries of the Face and Jaws" (Lantern Slides), which was discussed by Dr. Earl C. Padgett, Kansas City, Missouri; Dr. William P. Fite, Muskogee, Oklahoma; Dr. Harold L. D. Kirkham, Houston, Texas; and in closing by the essayist.

Dr. R. Glen Spurling, Louisville, Kentucky, read a paper entitled "Cerebral and Cord Injuries," which was discussed by

Dr. Harry Wilkins, Oklahoma City, Oklahoma; Dr. R. Eustace Semmes, Memphis, Tennessee; Dr. Earl D. McBride, Oklahoma City, Oklahoma; and in closing by the essayist.

Dr. Frank D. Dickson, Kansas City, Missouri, read a paper entitled "Injuries to the Bony Pelvis" (Lantern Slides), which was discussed by Dr. D. H. O'Donoghue, Oklahoma City, Oklahoma; Dr. I. William Nachlas, Baltimore, Maryland; and in closing by the essayist.

Dr. James D. Rives, New Orleans, Louisiana, read a paper entitled "Thoracic Injuries," which was discussed by Dr. Richard T. Shackelford, Baltimore, Maryland; Dr. R. J. White, Fort Worth, Texas; and in closing by the essayist.

Dr. George O. Eaton, Baltimore, Maryland, read a paper entitled "Injuries to the Extremities," which was discussed by Dr. C. E. Clymer, Oklahoma City, Oklahoma; Dr. Guy A. Caldwell, New Orleans, Louisiana; and Dr. Frank D. Dickson, Kansas City, Missouri.

The Nominating Committee reported the following nominations for Section officers, the nominees being duly elected by vote of the Section:

Chairman—Dr. Robert M. Howard, Oklahoma City, Oklahoma.
Vice-Chairman—Dr. H. A. Gamble, Greenville, Mississippi.
Secretary—Dr. J. M. T. Finney, Jr., Baltimore, Maryland.

It was moved and carried that the meetings of the Surgical Section be held not later than Thursday and not necessarily only in the mornings.

The Section then adjourned *sine die*.

SECTION ON BONE AND JOINT SURGERY

Officers

Chairman—Dr. Alfred R. Shands, Jr., Durham, North Carolina.
Vice-Chairman—Dr. Earl D. McBride, Oklahoma City, Oklahoma.
Secretary—Dr. J. Hiram Kite, Atlanta, Georgia.

Wednesday, November 16, 2:00 p. m.

The Section met in the Municipal Auditorium, Room No. 2, Oklahoma City, Oklahoma, and was called to order by the Chairman, Dr. Alfred R. Shands, Jr., Durham, North Carolina, who presided.

The Chairman appointed the following Nominating Committee: Dr. Guy A. Caldwell, New Orleans, Louisiana; Dr. I. William Nachlas, Baltimore, Maryland; and Dr. D. H. O'Donoghue, Oklahoma City, Oklahoma.

Paper by Dr. Oscar L. Miller, Charlotte, North Carolina, and Dr. Lenox D. Baker, Durham, North Carolina, entitled "Fracture and Fracture-Dislocation of the Astragalus" (Lantern Slides), was read by Dr. Baker and was discussed by Dr. Guy A. Caldwell, New Orleans, Louisiana; Dr. W. M. Roberts, Gastonia, North Carolina; and in closing by Dr. Baker.

Dr. Alfred R. Shands, Jr., Durham, North Carolina, read his Chairman's Address, entitled "Orthopedic Surgery and the Southern Medical Association."

Dr. Austin T. Moore, Columbia, South Carolina, read a paper entitled "The Treatment of Compound Fractures," which was discussed by Dr. F. A. Stuart, Jr., Tulsa, Oklahoma; Dr. J. Warren White, Greenville, South Carolina; Dr. Robert D. Schrock, Omaha, Nebraska; Dr. Guy A. Caldwell, New Orleans, Louisiana; and in closing by the essayist.

Dr. A. Scott Hamilton, Monroe, Louisiana, read a paper entitled "Air Injections as an Aid in the Diagnosis of Industrial and Athletic Injuries of the Knee Joint" (Lantern Slides), which was discussed by Dr. D. H. O'Donoghue, Oklahoma City, Oklahoma; Dr. Earl D. McBride, Oklahoma City, Oklahoma; Dr. Guy W. Leadbetter, Washington, D. C.; and in closing by the essayist.

Dr. H. H. Haynes, Clarksburg, West Virginia, read a paper entitled "New Method of Treating Fractures by Skeletal Fixation of the Individual Bone" (Lantern Slides), which was discussed by Dr. Walter G. Stuck, San Antonio, Texas; Dr. W. K. West, Oklahoma City, Oklahoma; and in closing by the essayist.

The Section then adjourned until 2:00 p. m. Thursday.

Thursday, November 17, 2:00 p. m.

The Section met in the Municipal Auditorium, Room No. 2, Oklahoma City, Oklahoma, and was called to order by the Chairman, Dr. Shands, who presided.

Dr. W. Vernon Newman, Little Rock, Arkansas, read a paper entitled "Orthopedic Care of Convalescent Poliomyelitis: Report of Sixty Cases One Year Following Acute Onset," which was discussed by Dr. John D. Sherrill, Birmingham, Alabama; and in closing by the essayist.

Paper by Dr. W. B. Carrell and Dr. H. M. Childress, Dallas, Texas, entitled "Bone Block in Drop Foot Deformity: Factors Influencing Good Function" (Lantern Slides), was read by Dr. Carrell and was discussed by Dr. W. M. Roberts, Gastonia, North Carolina; Dr. Joseph E. Stewart, St. Louis, Missouri; and Dr. Willis C. Campbell, Memphis, Tennessee.

Dr. Robert D. Schrock, Omaha, Nebraska, read a paper entitled "Malignant Bone Tumors Arrested for Five Years or More" (Lantern Slides).

Dr. I. William Nachlas, Baltimore, Maryland, read a paper entitled "Acetabuloplasty for Stabilization of the Hip" (Lantern Slides), which was discussed by Dr. J. Hiram Kite, Atlanta, Georgia; Dr. Frank D. Dickson, Kansas City, Missouri; and in closing by the essayist.

Dr. Willis C. Campbell, Memphis, Tennessee, read a paper entitled "Repair of the Anterior Crucial Ligaments of the Knee Joint" (Lantern Slides and Motion Pictures), which was discussed by Dr. John F. Lovejoy, Jacksonville, Florida; Dr. F. W. Carruthers, Little Rock, Arkansas; and in closing by the essayist.

Dr. I. S. McReynolds, Houston, Texas, read a paper entitled "Cysts of the Semilunar Cartilages" (Lantern Slides), which was discussed by Dr. Paul C. Colonna, Oklahoma City, Oklahoma; Dr. Guy A. Caldwell, New Orleans, Louisiana; Dr. Willis C. Campbell, Memphis, Tennessee; and in closing by the essayist.

The Nominating Committee reported the following nominations for Section officers, the nominees being duly elected by vote of the Section:

Chairman—Dr. Earl D. McBride, Oklahoma City, Oklahoma.
Vice-Chairman—Dr. J. Hiram Kite, Atlanta, Georgia.
Secretary—Dr. Guy W. Leadbetter, Washington, D. C.

The Section then adjourned *sine die*.

SECTION ON GYNECOLOGY

Officers

Chairman—Dr. R. A. Ross, Durham, North Carolina.
Vice-Chairman—Dr. Wm. D. Phillips, New Orleans, Louisiana.
Secretary—Dr. John F. Lucas, Greenwood, Mississippi.

Wednesday, November 16, 9:00 a. m.

The Section met in the Municipal Auditorium, Room No. 5, Oklahoma City, Oklahoma, and was called to order by the Chairman, Dr. R. A. Ross, Durham, North Carolina, who read his Chairman's Address, entitled "Study of the Endometrium as an Indicator."

Dr. Palmer Findley, Omaha, Nebraska, read a paper entitled "Cancer of the Cervix" (Lantern Slides).

The Chairman appointed the following Nominating Committee: Dr. Wm. T. McConnell, Louisville, Kentucky; Dr. Herman W. Johnson, Houston, Texas; and Dr. Joseph W. Reddoch, New Orleans, Louisiana.

Dr. E. W. Bertner, Houston, Texas, read a paper entitled "Endometriosis and Endometriomata," which was discussed by Dr. M. Y. Dabney, Birmingham, Alabama; Dr. Quitman U. Newell, St. Louis, Missouri; Dr. John Zell Gaston, Houston, Texas; Dr. Karl John Karnaky, Houston, Texas; and in closing by the essayist.

Dr. Frederick V. Emmert, St. Louis, Missouri, read a paper entitled "Results of a Modern Technic in Vaginal Hysterectomy," which was discussed by Dr. James R. Bloss, Huntington, West Virginia; Dr. John W. Turner, Atlanta, Georgia; Dr. Philip C. Schreier, Memphis, Tennessee; and in closing by the essayist.

Dr. W. O. Johnson, Louisville, Kentucky, read a paper entitled "Polypous Cervical and Vaginal Hyperplasias in Association with Pregnancy" (Lantern Slides), which was discussed by Dr. Quitman U. Newell, St. Louis, Missouri; Dr. H. Vernon Sims, New Orleans, Louisiana; Dr. E. Payne Palmer, Phoenix, Arizona; Dr. E. L. King, New Orleans, Louisiana; Dr. Edwin C. Hamblen, Durham, North Carolina; and in closing by the essayist.

Dr. Lucien A. LeDoux, New Orleans, Louisiana, read a paper entitled "Some Comments on the Harmful Effects of Birth Control Practices," which was discussed by Dr. Wm. T. Pride, Mem-

phis, Tennessee; Dr. E. Payne Palmer, Phoenix, Arizona; Dr. Winnie M. Sanger, Oklahoma City, Oklahoma; Dr. John Zell Gaston, Houston, Texas; Dr. H. Randolph Unsworth, New Orleans, Louisiana; Dr. E. W. Bertner, Houston, Texas; and Dr. David M. Cox, Louisville, Kentucky.

The Nominating Committee reported the following nominations for Section officers, the nominees being duly elected by vote of the Section:

Chairman—Dr. E. W. Bertner, Houston, Texas.
Vice-Chairman—Dr. John F. Lucas, Greenwood, Mississippi.
Secretary—Dr. W. O. Johnson, Louisville, Kentucky.

The Section then adjourned until 2:00 p. m. Thursday for a joint session with the Section on Obstetrics (see minutes of Section on Obstetrics).

SECTION ON OBSTETRICS

Officers

Chairman—Dr. John McF. Bergland, Baltimore, Maryland.
Vice-Chairman—Dr. Milton Smith Lewis, Nashville, Tennessee.
Secretary—Dr. Joseph W. Reddoch, New Orleans, Louisiana.

Wednesday, November 16, 2:00 p. m.

The Section met in the Municipal Auditorium, Room No. 5, Oklahoma City, Oklahoma, and was called to order by the Chairman, Dr. John McF. Bergland, Baltimore, Maryland, who read his Chairman's Address, entitled "Changes in Obstetrical Procedure During the Past Thirty-Five Years."

Dr. Charles O. McCormick, Indianapolis, Indiana, read a paper entitled "Analgesia in Labor; Modified Gwathmey Technic" (Motion Pictures).

The Chairman appointed the following Nominating Committee: Dr. Wm. T. McConnell, Louisville, Kentucky; Dr. Thomas Benton Sellers, New Orleans, Louisiana; and Dr. James R. Bloss, Huntington, West Virginia.

Paper of Dr. Edward L. King and Dr. John S. Herring, New Orleans, Louisiana, entitled "Hypertensive States Complicating Pregnancy," was read by Dr. King and was discussed by Dr. W. Bush Anderson, Nashville, Tennessee; Dr. R. A. Ross, Durham, North Carolina; and in closing by Dr. King.

Dr. Howard P. Hewitt, Chattanooga, Tennessee, read a paper entitled "Preconceptional Care" (Lantern Slides), which was discussed by Dr. Edward P. Allen, Oklahoma City, Oklahoma; Dr. Earl Conway Smith, New Orleans, Louisiana; and in closing by the essayist.

Dr. Wm. T. McConnell, Louisville, Kentucky, read a paper entitled "Cephalo-Pelvic Disproportion with Special Reference to Borderline Pelves" (Lantern Slides), which was discussed by Dr. Calvin R. Hannah, Dallas, Texas; Dr. Robert M. Anderson, Shawnee, Oklahoma; Dr. Robert Johnston, Houston, Texas; and in closing by the essayist.

Dr. M. Pierce Rucker, Richmond, Virginia, read a paper entitled "Puerperal Inversion of the Uterus," which was discussed by Dr. Wm. T. Pride, Memphis, Tennessee; Dr. George T. Allen, Oklahoma City, Oklahoma; Dr. Ernest Lee Dorsett, St. Louis, Missouri; and Dr. Joseph W. Reddoch, New Orleans, Louisiana.

The Nominating Committee reported the following nominations for Section officers, the nominees being duly elected by vote of the Section:

Chairman—Dr. Milton Smith Lewis, Nashville, Tennessee.
Vice-Chairman—Dr. R. M. Anderson, Shawnee, Oklahoma.
Secretary—Dr. Joseph W. Reddoch, New Orleans, Louisiana.

The Section then adjourned until 2:00 p. m. Thursday for a joint session with the Section on Gynecology.

Thursday, November 17, 2:00 p. m.

Joint Session, Section on Gynecology and Section on Obstetrics.

The Sections, in joint session, met in the Municipal Auditorium, Room No. 5, Oklahoma City, Oklahoma.

Paper by Dr. Quitman U. Newell and Dr. W. C. Scrivner, St. Louis, Missouri, entitled "Pregnancy with Cervical Carcinoma," was read by Dr. Newell and was discussed by Dr. Earl Conway Smith, New Orleans, Louisiana; Dr. John F. Kuhn, Oklahoma City, Oklahoma; and in closing by Dr. Newell.

Dr. W. Wortham Maxwell, San Antonio, Texas, read a paper entitled "Hysterotomy in Hydatidiform Mole," which was discussed by Dr. W. W. Wells, Oklahoma City, Oklahoma; Dr. Thomas Benton Sellers, New Orleans, Louisiana; Dr. Julius McIver, Dallas, Texas; Dr. Walter Scott Hudiburg, Independence, Kansas; and in closing by the essayist.

Dr. E. C. Hamblen, Durham, North Carolina, read a paper entitled "Clinical Correlates of Functional Uterine Bleeding," which was discussed by Dr. Philip C. Schreier, Memphis, Tennessee; Dr. Karl John Karnaky, Houston, Texas; and in closing by the essayist.

Section Clinic, Gynecological Cases, conducted and discussed by Dr. Palmer Findley, Omaha, Nebraska.

(a) Removal of One Hundred and Twenty-Nine Pound Multilocular Pseudomucinous Cystoma of Ovary." Case furnished and reported by Dr. John F. Kuhn, Oklahoma City, Oklahoma.

(b) "Disgerminoma of Ovary." Case furnished and reported by Dr. Gerald Rogers, Oklahoma City, Oklahoma.

(c) "Granulosa Cell Tumor of Ovary" (Lantern Slides). Case furnished and reported by Dr. Grider Penick, Oklahoma City, Oklahoma.

Section Clinic, Obstetrical Cases, conducted and discussed by Dr. Edward L. King, New Orleans, Louisiana.

(a) "Acute Hyperthyroidism Complicating Pregnancy." Case furnished and reported by Dr. W. W. Wells, Oklahoma City, Oklahoma.

(b) "Hypertension Complicating Pregnancy." Case furnished and reported by Dr. J. B. Eskridge, Jr., Oklahoma City, Oklahoma.

(c) "Undulant Fever Contracted During Pregnancy." Case furnished and reported by Dr. Dick Lowry, Oklahoma City, Oklahoma.

The Joint Session then adjourned *sine die*.

SECTION ON UROLOGY

Officers

Chairman—Dr. Jefferson C. Pennington, Nashville, Tennessee.
Vice-Chairman—Dr. William A. Reed, New Orleans, Louisiana.
Secretary—Dr. Grayson Carroll, St. Louis, Missouri.

Wednesday, November 16, 2:00 p. m.

The Section met in the Municipal Auditorium, Room No. 6, Oklahoma City, Oklahoma, and was called to order by the Chairman, Dr. Jefferson C. Pennington, Nashville, Tennessee, who presided.

Dr. J. Ullman Reaves, Mobile, Alabama, read a paper entitled "The Present Day Treatment of Hydrocele, with Emphasis on the Injection Treatment" (Lantern Slides), which was discussed by Dr. Rex Bolend, Oklahoma City, Oklahoma; and Dr. H. King Wade, Hot Springs National Park, Arkansas.

Dr. William M. Coppridge, Durham, North Carolina, read a paper entitled "Massive Cysts of Muller's Duct, with Report of Case," which was discussed by Dr. Raymond R. Callaway, Birmingham, Alabama; and Dr. Basil A. Hayes, Oklahoma City, Oklahoma.

SYMPOSIUM ON CARCINOMA OF THE PROSTATE

Dr. Frank L. Van Alstine, Jackson, Mississippi, read a paper entitled "Extensive Metastasis of Primary Carcinoma of Prostate: Case Report" (Lantern Slides).

Dr. Montague L. Boyd, Atlanta, Georgia, read a paper entitled "Pathology and Diagnosis of Carcinoma of the Prostate."

Dr. Edgar Burns, New Orleans, Louisiana, read a paper entitled "Management of the Inoperable Case" (Lantern Slides).

The Symposium was discussed by Dr. C. E. Burford, St. Louis, Missouri; and Dr. Russell A. Hennessey, Memphis, Tennessee.

Dr. H. Fay H. Jones, Little Rock, Arkansas, read a paper entitled "Management of Ureteral Calculi" (Lantern Slides), which was discussed by Dr. Henry S. Browne, Tulsa, Oklahoma.

Paper by Dr. Henry S. Browne and Dr. Roy L. Smith, Tulsa, Oklahoma, entitled "Idiopathic Gangrene of the Scrotum" (Lantern Slides), was read by Dr. Browne and was discussed by Dr. Robert H. Akin, Oklahoma City, Oklahoma.

By vote of the Section a floral wreath was ordered placed on the grave of Dr. W. J. Wallace, Oklahoma City, a former Chairman of the Section.

The Chairman appointed the following Nominating Committee: Dr. Robert H. Akin, Oklahoma City, Oklahoma; Dr. Rex E. Van Duzen, Dallas, Texas; and Dr. H. McClure Young, Columbia, Missouri.

The Section then adjourned until 2:00 p. m. Thursday.

Thursday, November 17, 2:00 p. m.

The Section met in the Municipal Auditorium, Room No. 6, Oklahoma City, Oklahoma, and was called to order by the Chairman, Dr. Pennington, who presided.

It was moved that a committee be appointed to assist the Association office in developing and supervising exhibits in urology.

It was moved that a telegram be sent Dr. B. Weems Turner, Houston, Texas, a former Chairman of the Section, expressing sympathy in the serious illness of his daughter.

Dr. Nelse F. Ockerblad, Kansas City, Missouri, read a paper entitled "Vesico-Vaginal Fistula," which was discussed by Dr. Clinton K. Smith, Kansas City, Missouri; Dr. James B. Neil, Knoxville, Tennessee; Dr. D. K. Rose, St. Louis, Missouri; and Dr. H. McClure Young, Columbia, Missouri.

Paper by Dr. Roy J. Holmes, Dr. Milton M. Coplan and Dr. Frank M. Woods, Miami, Florida, entitled "Urologic Determination of the Fecundity in the Male," was read by Dr. Woods and was discussed by Dr. Edward White, Dallas, Texas.

Dr. Roy B. Henline, New York, New York, read a paper entitled "Surgical Treatment of So-Called Bilateral Renal Tuberculosis."

Dr. Jefferson C. Pennington, Nashville, Tennessee, read his Chairman's Address entitled "The Present Status of Fever Therapy in Urology" (Lantern Slides).

SYMPOSIUM ON AUTONOMIC NERVOUS SYSTEM

Dr. Albert Kuntz, St. Louis, Missouri, read a paper entitled "The Autonomic Nervous System in Relation to Urology" (Lantern Slides).

Dr. Rex E. Van Duzen, Dallas, Texas, read a paper entitled "Correlation of Clinical Experience with Present Day Knowledge of Autonomic Nerve Supply of Bladder."

Paper by Dr. D. K. Rose and Dr. Lawrence F. Shefts, St. Louis, Missouri, entitled "Tabetic Bladder: Discussion of Etiology with Cystometric and Pathologic Studies" (Lantern Slides), was read by Dr. Rose.

The Symposium was discussed by Dr. Edgar G. Ballenger, Atlanta, Georgia.

The Nominating Committee reported the following nominations for Section officers, the nominees being duly elected by vote of the Section:

Chairman—Dr. William M. Coppridge, Durham, North Carolina.
Vice-Chairman—Dr. Henry S. Browne, Tulsa, Oklahoma.
Secretary—Dr. Grayson Carroll, St. Louis, Missouri.

The Section then adjourned *sine die*.

SECTION ON PROCTOLOGY

Officers

Chairman—Dr. Marion C. Pruitt, Atlanta, Georgia.
Vice-Chairman—Dr. Raymond L. Murdoch, Oklahoma City, Oklahoma.
Secretary—Dr. Curtice Rosser, Dallas, Texas.

Thursday, November 17, 6:00 p. m.

Informal Section Dinner

Friday, November 18, 9:00 a. m.

The Section met in the Municipal Auditorium, Room No. 2, Oklahoma City, Oklahoma, and was called to order by the Chairman, Dr. Marion C. Pruitt, Atlanta, Georgia, who read his Chairman's Address, entitled "Etiology and Treatment of Strangulated, Thrombosed, Infected and Gangrenous Internal Hemorrhoids."

The Chairman appointed the following Nominating Committee: Dr. Victor C. Tucker, San Antonio, Texas; Dr. Raymond L. Murdoch, Oklahoma City, Oklahoma; and Dr. George Eubanks, Atlanta, Georgia.

Dr. Dudley Smith, San Francisco, California, read a paper entitled "The Management of Complex Fistula-in-Ano," which was discussed by Dr. Victor C. Tucker, San Antonio, Texas; Dr. Claude C. Tucker, Wichita, Kansas; Dr. John L. Jelks, Memphis, Tennessee; and in closing by the essayist.

Dr. W. Kress McIntyre, St. Louis, Missouri, read a paper entitled "The Early Diagnosis and Treatment of Rectal Cancer," which was discussed by Dr. John L. Jelks, Memphis, Tennessee; Dr. Maurice Lescale, New Orleans, Louisiana; and Dr. Curtice Rosser, Dallas, Texas.

Dr. Victor K. Allen, Tulsa, Oklahoma, read a paper entitled "Special Points of Technic in Surgery about the Sphincter Ani Muscle" (Lantern Slides), which was discussed by Dr. Tom E. Smith, Dallas, Texas; Dr. Dudley Smith, San Francisco, California; Dr. George H. Thiele, Kansas City, Missouri; and in closing by the essayist.

Dr. George Eubanks, Atlanta, Georgia, read a paper entitled "The Etiological Significance of the Pectinate Line," which was discussed by Dr. Fred B. Campbell, Kansas City, Missouri; Dr. Claude C. Tucker, Wichita, Kansas; and in closing by the essayist.

Dr. John L. Jelks, Memphis, Tennessee, extended a cordial invitation to all proctologists to attend the 1939 meeting in Memphis.

Telegrams of greeting were read from Dr. Granville S. Hanes, Louisville, Kentucky, and Dr. Hoyt R. Allen, Little Rock, Arkansas.

The Nominating Committee reported the following nominations for Section officers, the nominees being duly elected by vote of the Section:

Chairman—Dr. Curtice Rosser, Dallas, Texas.
Vice-Chairman—Dr. John L. Jelks, Memphis, Tennessee.
Secretary—Dr. Fredk. Bennett Campbell, Kansas City, Missouri.

The Section then adjourned *sine die*.

SECTION ON RAILWAY SURGERY

Officers

Chairman—Dr. George A. Traylor, Augusta, Georgia.
Vice-Chairman—Dr. Oliver B. Zeinert, St. Louis, Missouri.
Secretary—Dr. James W. Davis, Statesville, North Carolina.

Wednesday, November 16, 9:00 a. m.

The Section met in the Municipal Auditorium, Room No. 2, Oklahoma City, Oklahoma, and was called to order by the Chairman, Dr. George A. Traylor, Augusta, Georgia, who read his Chairman's Address entitled "Is Revision of the Medical Curriculum Needed to Meet the Demands of Industry?"

Mr. James J. Donoghue, General Claims Attorney, Louisville and Nashville Railroad, Louisville, Kentucky, read a paper entitled "Railroad Surgeons, as I Know Them in the Communities They Serve," which was discussed by Dr. J. D. Collins, Norfolk, Virginia.

Dr. A. W. Adson, Rochester, Minnesota, read a paper entitled "Head Injuries" (Lantern Slides) which was discussed by Dr. Edgar F. Fincher, Atlanta, Georgia; Dr. Ernest Sachs, St. Louis, Missouri; Dr. Ralph M. Stuck, Denver, Colorado; and in closing by the essayist.

Dr. Thomas G. Orr, Kansas City, Missouri, read a paper entitled "Abdominal Distention and Intestinal Obstruction Following Skeletal Injuries" (Lantern Slides), which was discussed by Dr. Ross A. Woolsey, St. Louis, Missouri; and Dr. C. H. Ramsay, Laurel, Mississippi.

The Chairman appointed the following Nominating Committee: Dr. J. H. Pierpont, Pensacola, Florida; Dr. Wm. C. McCarver, Vidette, Georgia; and Dr. E. S. Ferguson, Oklahoma City, Oklahoma.

Dr. H. vH. Thatcher, Portland, Oregon, read a paper entitled "Use of Stainless Steel Rods to Canalize Flexor Tendon Sheaths" (Lantern Slides), which was discussed by Dr. P. D. Abramson, Shreveport, Louisiana.

Dr. E. C. Holmblad, Chicago, Illinois, read a paper entitled "Improved X-Ray Technic in Studying Knee Joints" (Lantern Slides).

Dr. B. G. Dyer, Topeka, Kansas, read a paper entitled "Eye Examinations in Railroad Service," which was discussed by Dr. E. S. Ferguson, Oklahoma City, Oklahoma; Dr. D. L. Edwards, Tulsa, Oklahoma; and in closing by the essayist.

The Nominating Committee reported the following nominations for Section officers, the nominees being duly elected by vote of the Section:

Chairman—Dr. James W. Davis, Statesville, North Carolina.
Vice-Chairman—Dr. Raymond L. Murdoch, Oklahoma City, Oklahoma.
Secretary—Dr. Edgar F. Fincher, Atlanta, Georgia.

The Section then adjourned *sine die*.

SECTION ON OPHTHALMOLOGY AND OTOLARYNGOLOGY

Officers

Chairman—Dr. Oscar M. Marchman, Dallas, Texas.
Vice-Chairman—Dr. Harvey B. Searcy, Tuscaloosa, Alabama.
Secretary—Dr. John R. Hume (deceased), New Orleans, Louisiana.

Wednesday, November 16, 9:00 a. m.

The Section met in the Municipal Auditorium, Room No. 4, Oklahoma City, Oklahoma, and was called to order by the Chairman, Dr. Oscar M. Marchman, Dallas, Texas, who presided. The Vice-Chairman, Dr. Searcy, acted as Secretary.

The Section took cognizance of the death since the last meeting of its Secretary, Dr. John R. Hume, New Orleans, Louisiana. The Chairman appointed the following Committee to prepare suitable resolutions from the Section on the death of Dr. Hume: Dr. Millard F. Arbuckle, St. Louis, Missouri; Dr. Lyle M. Sellers, Dallas, Texas; and Dr. Thomas W. Moore, Huntington, West Virginia.

Dr. Arthur W. Proetz, St. Louis, Missouri, read a paper entitled "Physiology of the Sinuses," which was discussed by Dr. L. E. Darrough, Dallas, Texas; Dr. L. Chester McHenry, Oklahoma City, Oklahoma; Dr. Walter B. Dobson, Jackson, Mississippi; Dr. Carl M. Harwell, Osceola, Arkansas; and in closing by the essayist.

Dr. Philip Bayon, New Orleans, Louisiana, read a paper entitled "Histopathology of Sinusitis" (Lantern Slides) which was discussed by Dr. Arthur M. Alden, St. Louis, Missouri; Dr. Wm. Groce Harrison, Birmingham, Alabama; Dr. Arthur W. Proetz, St. Louis, Missouri; and in closing by the essayist.

Dr. Oscar M. Marchman, Dallas, Texas, read his Chairman's Address entitled "Anatomic Variations in the Development of the Para-Nasal Sinuses" (Lantern Slides), which was discussed by Dr. Walter A. Wells, Washington, D. C.; and in closing by the essayist.

Dr. J. W. Jervey, Jr., Greenville, South Carolina, read a paper entitled "Conservative Treatment of the Sinuses" (Lantern Slides), which was discussed by Dr. William D. Gill, San Antonio, Texas; Dr. Claude C. Cody, Houston, Texas; Dr. H. H. McClelland, San Antonio, Texas; Dr. Murdock Equen, Atlanta, Georgia; and in closing by the essayist.

Dr. Louis Daily, Houston, Texas, read a paper entitled "Refinements in the Technic of the Radical Mastoid Operation and an Improved Plastic Flap" (Lantern Slides and Motion Pictures), which was discussed by Dr. W. J. Snow, Houston, Texas; Dr. L. M. Sellers, Dallas, Texas; and in closing by the essayist.

The Chairman appointed the following Nominating Committee: Dr. M. M. Cullom, Nashville, Tennessee; Dr. William D. Gill, San Antonio, Texas; and Dr. Wiley R. Buffington, New Orleans, Louisiana.

The Chairman called a special meeting at the Biltmore Hotel, Room 226, at 3:00 p. m. to discuss the question of dividing the Section, having a Section on Ophthalmology and a Section on Otolaryngology* See bottom of next column.

The Section then adjourned until 9:00 a. m. Tuesday.

Thursday, November 17, 9:00 a. m.

The Section met in the Municipal Auditorium, Room No. 4, Oklahoma City, Oklahoma, and was called to order by the Chairman, Dr. Marchman, who presided.

Dr. Bernard Samuels, New York, New York, read a paper entitled "Pathology of Complicated Cataracts" (Lantern Slides), which was discussed by Dr. B. J. Alvis, St. Louis, Missouri; Dr. K. W. Cosgrove, Little Rock, Arkansas; Dr. Edward H. Cary, Dallas, Texas; Dr. Ray K. Daily, Houston, Texas; Dr. John H. Burleson, San Antonio, Texas; and in closing by the essayist.

Dr. W. C. Wells, Glasgow, Kentucky, read a paper entitled "Treatment of Trachoma," which was discussed by Dr. John H. Burleson, San Antonio, Texas; Dr. J. Wesley McKinney, Memphis, Tennessee; Dr. John O. McReynolds, Dallas, Texas; Dr. Theodore J. Dimitry, New Orleans, Louisiana; Dr. Edward H. Cary, Dallas, Texas; Dr. John R. Walker, Enid, Oklahoma; and Dr. Lawrence T. Post, St. Louis, Missouri.

Dr. Stacy C. Howell, Atlanta, Georgia, read a paper entitled "The Present Status of Shock and Fever Therapy in Ophthalmology," which was discussed by Dr. Theodore J. Dimitry, New Orleans, Louisiana; Dr. K. W. Cosgrove, Little Rock, Arkansas; Dr. Meyer Wiener, St. Louis, Missouri; and in closing by the essayist.

Dr. Lawrence T. Post, St. Louis, Missouri, read a paper entitled "Thermophore Treatment of Retinal Detachment" (Lantern Slides), which was discussed by Dr. B. Y. Alvis, St. Louis, Missouri; Dr. Wm. Thornwall Davis, Washington, D. C.; Dr. E. M. Sykes, San Antonio, Texas; and in closing by the essayist.

Dr. H. Rommel Hildreth, St. Louis, Missouri, read a paper entitled "The Fluorescent Lamp in Surgery of the Lens" (Motion Pictures), which was discussed by Dr. John O. McReynolds, Dallas, Texas; and in closing by the essayist.

The Section then adjourned until 9:00 a. m. Friday.

Friday, November 18, 9:00 a. m.

The Section met in the Municipal Auditorium, Room No. 4, Oklahoma City, Oklahoma, and was called to order by the Chairman, Dr. Marchman, who presided.

Dr. Thomas Carmody, Denver, Colorado, read a paper entitled "Medical and Surgical Treatment of Chronic Sinus Disease" (Lantern Slides).

Dr. Raymond McKenzie, Baltimore, Maryland, read a paper entitled "The Surgical Aspects of Chronic Sinusitis."

Papers of Dr. Carmody and Dr. McKenzie were discussed by Dr. Arthur M. Alden, St. Louis, Missouri; Dr. John H. Foster, Houston, Texas; Dr. W. Likely Simpson, Memphis, Tennessee; Dr. W. W. Sanger, Ponca City, Oklahoma; and Dr. Millard F. Arbuckle, St. Louis, Missouri.

Dr. Sidney Israel, Houston, Texas, read a paper entitled "Cancer of the Larynx and Its Treatment by Total Laryngectomy" (Lantern Slides).

Dr. Millard F. Arbuckle, St. Louis, Missouri, read a paper entitled "The Treatment of Cancer of the Larynx with Comparison of Results Obtaineed by Surgery and Radiation Therapy" (Lantern Slides).

Papers of Dr. Israel and Dr. Arbuckle were discussed by Dr. John H. Foster, Houston, Texas; Dr. Wm. D. Gill, San Antonio, Texas; Dr. Wendell G. Scott, St. Louis, Missouri; Dr. Murdock Equen, Atlanta, Georgia; Dr. Thomas Carmody, Denver, Colorado; and in closing by the essayists.

Dr. Paul L. Mahoney read a paper entitled "Deep Abscess of Neck," which was discussed by Dr. Murdock Equen, Atlanta, Georgia; Dr. Charles D. Blassingame, Memphis, Tennessee; and in closing by the essayist.

The Nominating Committee reported the following nominations

*The special meeting called to discuss the division of the Section was presided over by the Chairman of the Section, Dr. Oscar M. Marchman, who explained that in the South only 13 per cent of the men doing ophthalmology and otolaryngology limit their practice to ophthalmology, only 16 per cent limit their practice to otolaryngology, while 71 per cent do ophthalmology and otolaryngology. The matter was discussed freely. The group decided that it was best for the Section not to be divided, that it should remain the Section on Ophthalmology and Otolaryngology, and that the Chairman, Vice-Chairman and Secretary as a program committee should group the papers pertaining to ophthalmology and otolaryngology, one group for a morning session and the other group for an afternoon session, and that the entire time of the meeting should be taken up with Section work.

for Section officers, the nominees being duly elected by vote of the Section:

Chairman—Dr. Lawrence T. Post, St. Louis, Missouri.
Chairman-Elect—Dr. Harvey B. Searcy, Tuscaloosa, Alabama.
Vice-Chairman—Dr. C. C. Cody, Houston, Texas.
Secretary—Dr. L. Chester McHenry, Oklahoma City, Oklahoma.

The Section then adjourned *sine die*.

SECTION ON OPHTHALMOLOGY AND OTOLARYNGOLOGY

ROUND TABLE SESSION

Thursday, November 17, 2:00 p. m.

The Round Table Session was held in the Municipal Auditorium, Room No. 4, Oklahoma City, Oklahoma. Chairman for Ophthalmology, Dr. Edward H. Cary, Dallas, Texas, and Chairman for Otolaryngology, Dr. W. Likely Simpson, Memphis, Tennessee.

OPHTHALMOLOGY

Dr. Wm. Thornwall Davis, Washington, D. C., presented the subject "Diagnosis and Treatment of Convergent Squint."

Dr. Wiley R. Buffington, New Orleans, Louisiana, presented the subject "Surgical Treatment of Detachment of the Retina" (Lantern Slides).

Dr. Wm. Groce Harrison, Birmingham, Alabama, presented the subject "Some Random Thoughts on Tuberculosis of the Eye."

Dr. Harvey J. Howard, St. Louis, Missouri, presented the subject "The Ocular Disturbance of Hypothyroidism" (Lantern Slides).

OTOLARYNGOLOGY

Dr. M. M. Cullom, Nashville, Tennessee, presented the subject "The Effect of Sinus Disease upon the Eye" (Lantern Slides).

Dr. Arthur W. Proetz, St. Louis, Missouri, and Dr. John O. McReynolds, Dallas, Texas, showed moving pictures.

The Round Table Session then adjourned *sine die*.

SECTION ON ANESTHESIA

Officers

Chairman—Dr. Ansel M. Caine, New Orleans, Louisiana.
Vice-Chairman—Dr. Carl W. Hoeflich, Houston, Texas.
Secretary—Dr. Merrill C. Beck, New Orleans, Louisiana.

Thursday, November 17, 9:00 a. m.

The Section met in the Municipal Auditorium, Room No. 9, Oklahoma City, Oklahoma, and was called to order by Dr. Russell F. Bonham, Houston, Texas, who presided in the absence of the Chairman and Vice-Chairman.

Dr. Peter Graffagnino, New Orleans, Louisiana, read a paper entitled "Spinal and Epidural Anesthesia in Gynecology and Obstetrics: A Review of Eight Thousand Two Hundred and Twenty-Nine Cases at Charity Hospital in New Orleans," which was discussed by Dr. Brunel D. Faris, Oklahoma City, Oklahoma; and Dr. Frederick V. Emmert, St. Louis, Missouri.

Dr. H. Boyd Stewart, Tulsa, Oklahoma, read a paper entitled "Choice of Anesthesia," which was discussed by Dr. H. B. Harms, Omaha, Nebraska; and Dr. George S. Mechling, Oklahoma City, Oklahoma.

Dr. Watt Yeiser, Columbia, Tennessee, read a paper entitled "The Treatment of Pneumonia," which was discussed by Dr. R. A. Miller, San Antonio, Texas.

Dr. Donald M. Paton, Houston, Texas, read a paper entitled "Studies in Obstetric Analgesia" (Lantern Slides), which was discussed by Dr. Richard D. Sanders, Louisville, Kentucky; Dr. Milton Serwer, Oklahoma City, Oklahoma; and Dr. Mary Catherine Baldwin, Riverside, California.

Dr. George H. Paschal, San Antonio, Texas, presented the subject "Cyclopropane Anesthesia" (Motion Pictures in Color).

Dr. E. Payne Palmer, Phoenix, Arizona, read a paper entitled "Basic Intravenous Anesthesia with Pentothal Sodium", which was discussed by Dr. B. M. Carraway, Birmingham, Alabama.

Paper by Dr. C. Walter Metz, Dr. Arthur A. Wearner and Dr. Albert E. Evans, Denver, Colorado, entitled "The Therapeutic Use of Helium" (Lantern Slides), was read by Dr. Wearner and was discussed by Dr. Hubert E. Doudna, Oklahoma City, Oklahoma; and Dr. Russell F. Bonham, Houston, Texas.

The Section proceeded to the election of Section officers with the following results:

Chairman—Dr. Carl W. Hoeflich, Houston, Texas.
Vice-Chairman—Dr. J. D. McCulley, Houston, Texas.
Secretary—Dr. Merrill C. Beck, New Orleans, Louisiana.

The Section then adjourned *sine die*.

SECTION ON MEDICAL EDUCATION

Officers

Chairman—Dr. Harvey S. Thatcher (deceased), Little Rock, Arkansas.
Vice-Chairman and Acting Chairman—Dr. Kenneth M. Lynch, Charleston, South Carolina.
Secretary—Dr. Harvey B. Haag, Richmond, Virginia.

Wednesday, November 16, 9:00 a. m.

The Section met in the Municipal Auditorium, Room No. 9, Oklahoma City, Oklahoma, and was called to order by the Acting Chairman, Dr. Kenneth M. Lynch, Charleston, South Carolina, who spoke briefly on the history and achievements of Dr. Harvey S. Thatcher, Chairman of the Section, who died early in the year.

Dr. Kenneth M. Lynch, Charleston, South Carolina, for his Chairman's Address spoke extemporaneously on the subject, "Extra-Curricular Interests of Medical Students," which was discussed by Dr. Hardy A. Kemp, Dallas, Texas; Dr. Lee E. Sutton, Richmond, Virginia; Dr. M. Pinson Neal, Columbia, Missouri; Dr. Olin S. Gibbs, Memphis, Tennessee; and Dr. Lewellys F. Barker, Baltimore, Maryland.

The Nominating Committee was composed of Dr. George T. Caldwell Chairman, Dallas, Texas; Dr. Kenneth M. Lynch, Charleston, South Carolina; and Dr. Harvey B. Haag, Richmond, Virginia.

SYMPOSIUM ON MEDICAL EDUCATION

Dr. Lewellys F. Barker, Baltimore, Maryland, presented the subject "The Practicing Physician Looks at the Preclinical Sciences."

Dr. H. L. D. Kirkham, Houston, Texas, presented the subject "The Practicing Surgeon Looks at the Preclinical Sciences."

Dr. Samuel L. Ledbetter, Jr., Birmingham, Alabama, presented the subject "The Practicing Surgeon Looks at the Clinical Sciences" and "The Internship."

The Symposium was discussed by Dr. Robert U. Patterson, Oklahoma City, Oklahoma; Dr. F. R. Bradley, St. Louis, Missouri; Dr. Olin S. Gibbs, Memphis, Tennessee; Dr. Lewellys F. Barker, Baltimore, Maryland; Dr. Harry C. Schmeisser, Memphis, Tennessee; and in closing by Dr. Kirkham and Dr. Ledbetter.

The Nominating Committee reported the following nominations for Section officers, the nominees being duly elected by vote of the Section:

Chairman—Dr. M. Pinson Neal, Columbia, Missouri.
Vice-Chairman—Dr. Robert U. Patterson, Oklahoma City, Oklahoma.
Secretary—Dr. Harvey B. Haag, Richmond, Virginia.

Dr. Frank R. Bradley, St. Louis, Missouri, and Dr. Robert U. Patterson, Oklahoma City, Oklahoma, presented a resolution that the name of the Section be changed to the "Section on Medical Education and Hospital Training," pointing out that hospitals as training centers should be included in the activities of the Section. The resolution was adopted and the Council* of the Southern Medical Association requested to change the name.

The Section then adjourned *sine die*.

*At the regular meeting of the Council held on Wednesday noon the request of the Section was presented and their request granted, the name of the Section in the future to be "Section on Medical Education and Hospital Training."

SECTION ON PUBLIC HEALTH

Officers

Chairman—Dr. W. C. Williams, Nashville, Tennessee.
Vice-Chairman—Dr. Fred W. Caudill, Louisville, Kentucky.
Secretary—Dr. Henry C. Ricks, Jackson, Mississippi.

Wednesday, November 16, 2:00 p. m.

The Section met in the Municipal Auditorium, Room No. 8, Oklahoma City, Oklahoma, and was called to order by the Chairman, Dr. W. C. Williams, Nashville, Tennessee, who read his Chairman's Address entitled "Looking Forward."

Dr. M. E. McCaskill, President, Arkansas State Board of Health, Little Rock, Arkansas, read a paper entitled "The Maternal and Child Health Program in Arkansas" (Lantern Slides), which was discussed by Dr. J. M. Coleman, Austin, Texas; and Dr. John Marshall Saunders, Nashville, Tennesee.

The Chairman appointed the following Nominating Committee: Dr. James A. Hayne, Columbia, South Carolina; Dr. Harry F. Parker, Jefferson City, Missouri; and Dr. F. Michael Smith, Vicksburg, Mississippi.

Dr. Maxwell E. Lapham, Director of Division of Medical Extension, Tulane University School of Medicine, New Orleans, Louisiana, read a paper entitled "Cooperative Obstetric Delivery Service by Private Physicians and County Health Departments," which was discussed by Dr. E. P. Bowerman, Trenton, Tennessee; Dr. Thomas Purser, Jr., McComb, Mississippi; Dr. T. Paul Haney, Jr., McComb, Mississippi; and in closing by the essayist.

Dr. Frank E. Whitacre, Clinical Instructor, Postgraduate Instruction in Obstetrics, Murfreesboro, Tennessee, read a paper entitled "Postgraduate Teaching of Obstetrics as Conducted in Tennessee," which was discussed by Dr. James R. Reinberger, Memphis, Tennessee; Dr. W. Bush Anderson, Nashville, Tennessee; Dr. Maxwell E. Lapham, New Orleans, Louisiana; and Dr. W. L. Williamson, Memphis, Tennessee.

The Section then adjourned until 9:00 a. m. Thursday.

Thursday, November 17, 9:00 a. m.

The Section met in the Municipal Auditorium, Room No. 8, Oklahoma City, Oklahoma, and was called to order by the Chairman, Dr. Williams, who presided.

Paper by Dr. G. W. Cox and Dr. Carl A. Nau, Texas State Department of Health, Austin, Texas, entitled "Industrial Hygiene as a Function of the State Department of Health," was read by Dr. Nau and was discussed by Dr. Crit Pharris, Nashville, Tennessee.

Paper by Dr. W. H. Y. Smith, Bureau of Preventable Diseases, Dr. D. G. Gill, Director, Bureau of Preventable Disease, Alabama State Department of Health, Montgomery, Alabama, and Dr. J. G. McAlpine, University of Maryland School of Medicine, Baltimore, Maryland, entitled "Intestinal Parasites in Alabama" (Lantern Slides), was read by Dr. Smith and was discussed by Dr. Jos. S. D'Antoni, New Orleans, Louisiana; Dr. J. N. Baker, Montgomery, Alabama; and Dr. John A. Ferrell, New York, New York.

Dr. H. H. Walker, Associate Professor of Public Health Education, University of Tennessee, Knoxville, Tennessee, read a paper entitled "A State-Wide Program in Health Education," which was discussed by Dr. P. E. Blackerby, Louisville, Kentucky.

Dr. E. Gurney Clark, Instructor in Medicine and Epidermiologist in Syphilis, Vanderbilt University School of Medicine, Nashville, Tennessee, read a paper entitled "Fundamentals Essential for the Eradication of Syphilis" (Lantern Slides), which was discussed by Dr. J. R. Heller, Jr., New Orleans, Louisiana; Dr. Harry M. Robinson, Baltimore, Maryland; Dr. G. Foard McGinnes, Richmond, Virginia; and Dr. W. H. Y. Smith, Montgomery, Alabama.

The Nominating Committee reported the following nominations for Section officers, the nominees being duly elected by vote of the Section:

Chairman—Dr. G. Foard McGinnes, Richmond, Virginia.
Vice-Chairman—Dr. Charles M. Pearce, Oklahoma City, Oklahoma.
Secretary—Dr. Henry C. Ricks, Jackson, Mississippi.

The Section then adjourned *sine die*.

AMERICAN PUBLIC HEALTH ASSOCIATION, Southern Branch

Meeting conjointly with Southern Medical Association

Officers

President—Dr. James A. Hayne, Columbia, South Carolina.
First Vice-President—Dr. H. A. Kroeze, Jackson, Mississippi.
Second Vice-President—Miss Frances Hagar, R.N., Nashville, Tennessee.
Third Vice-President—Dr. Martin R. Beyer, Oklahoma City, Oklahoma.
Secretary-Treasurer—Dr. G. Foard McGinnes, Richmond, Virginia.

Tuesday, November 15, 9:30 a. m.

The Public Health Nursing Section met in the Municipal Auditorium, Room No. 9, Oklahoma City, Oklahoma, and was called to order by the Chairman, Miss Donna Pearce, Washington, D. C., who presided.

Following the address of the Chairman there was a round table discussion on state nursing service.

Tuesday, November 15, 9:30 a. m.

The Sanitary Engineers' and Sanitation Officers' Section met in the Municipal Auditorium, Room No. 8, Oklahoma City, Oklahoma, and was called to order by the Chairman, Mr. Warren H. Booker, Raleigh, North Carolina, who presided.

The following presentations were made: Mr. V. M. Ehlers, Director, Bureau of Sanitary Engineering, State Board of Health, Austin, Texas, "Licensing Milk Plant Operators." ¶Mr. L. G. Lenert, Division Engineer, Georgia Department of Public Health, Atlanta, Georgia, "Progress in Hookworm Sanitation in Georgia." ¶Mr. Earle C. Hubbard, District Sanitarian, North Carolina State Board of Health, Morehead City, North Carolina, "Rating System for Shellfish Sanitation." ¶Mr. F. B. Wood, Assistant Sanitary Engineer, Department of Public Health, Montgomery, Alabama, "Recent Development in the Construction and Maintenance of Impounded Water Projects." ¶Mr. Nelson H. Rector, Supervisor of Malaria Control Engineering, Mississippi State Board of Health, Jackson, Mississippi, "Permanent Drainage in the Malaria Control Program."

Tuesday, November 15, 12:30 noon

The meeting of the Governing Council was held as a luncheon at the Oklahoma Biltmore Hotel, Dr. James A. Hayne, President, presiding.

Tuesday, November 15, 2:00 p. m.

The seventh annual General Scientific Session convened in the Municipal Auditorium, Room No. 8, Oklahoma City, Oklahoma, and was called to order by the President, Dr. James A. Hayne, State Health Officer, Columbia, South Carolina, who read his President's Address entitled "Plagues: Ancient and Modern."

Dr. J. F. Siler, Colonel, Medical Corps, Director, Army Medical School, Army Medical Center, Washington, D. C., read a paper entitled "Recent Work on Typhoid Fever," which was discussed by Dr. H. C. Ricks, Jackson, Mississippi.

Miss Helena A. Dunham, Director, Division of Public Health Nursing, State Board of Health, Jefferson City, Missouri, read a paper entitled "The Place of the Public Health Nurse in a Communicable Disease Program," which was discussed by Dr. W. C. Williams, Nashville, Tennessee.

Mr. John Andrews, Assistant Engineer, North Carolina State Board of Health, Raleigh, North Carolina, read a paper entitled "Coordinating Milk Sanitation with Other Public Health Activities," which was discussed by Dr. Chas. M. Pearce, Oklahoma City, Oklahoma.

The Association then adjourned until 9:30 a. m. Wednesday.

Wednesday, November 16, 9:30 a. m.

The General Scientific Session reconvened in the Municipal Auditorium, Room No. 8, Oklahoma City, Oklahoma, the President, Dr. Hayne, presiding.

Mr. P. G. Hasell, Malaria Engineer, State Board of Health, Columbia, South Carolina, read a paper entitled "The Use of Butt-Joint Tile as a Measure of Controlling Mosquito Breeding," which was discussed by Dr. L. L. Williams, Jr., Washington, D. C.

Dr. Julian M. Ruffin, Department of Medicine, Duke University School of Medicine, Durham, North Carolina, read a paper entitled "The Treatment and Prevention of Pellagra," which was discussed by Dr. J. N. Baker, Montgomery, Alabama.

Dr. W. B. Grayson, State Health Officer, Little Rock, Arkansas, read a paper entitled "Undulant Fever in Arkansas," which was discussed by Dr. M. R. Beyer, Oklahoma City, Oklahoma.

Dr. W. F. Walker, Director, Division of Health Studies, Commonwealth Fund, New York, New York, read a paper entitled "Where Do We Go Next in Public Health?"

At the business session the following officers were elected:

President—Dr. J. N. Baker, Montgomery, Alabama.
First Vice-President—Dr. W. B. Grayson, Little Rock, Arkansas.
Second Vice-President—Mr. V. M. Ehlers, Austin, Texas.
Third Vice-President—Miss Donna Pearce, Washington, D. C.
Secretary-Treasurer—Dr. P. E. Blackerby, Louisville, Kentucky.

The Association then adjourned *sine die*.

NATIONAL MALARIA COMMITTEE

Meeting conjointly with Southern Medical Association

Officers

Honorary Chairman—Dr. L. O. Howard, Washington, D. C.
Chairman—Dr. T. H. D. Griffitts, Savannah, Georgia.
Chairman-Elect—Mr. L. M. Clarkson, Atlanta, Georgia.
Vice-Chairman—Dr. E. C. Faust, New Orleans, Louisiana.
Secretary-Treasurer—Dr. Mark F. Boyd, Tallahassee, Florida.

Wednesday, November 16, 9:00 a. m.

The business meeting of the twenty-first annual session of the National Malaria Committee was held at the Municipal Auditorium, Oklahoma City, and was called to order by the Chairman, Dr. T. H. D. Griffitts, Savannah, Georgia, who presided.

The minutes of the 1937 session, held in New Orleans, Louisiana, were approved as published in the January 1938 issue of the SOUTHERN MEDICAL JOURNAL.

The Chairman appointed the following temporary sub-committees: Auditing—Dr. L. T. Coggeshall, New York, New York; Mr. C. Heard Field, Savannah, Georgia; and Mr. Nelson H. Rector, Jackson, Mississippi. Nominating—Dr. L. L. Williams, Jr., Washington, D. C.; Mr. C. C. Kiker, Wilson Dam, Alabama; and Dr. J. N. Baker, Montgomery, Alabama.

Upon invitation, Dr. Malcolm H. Soule, Ann Arbor, Michigan, Secretary of Section N of the American Association for the Advancement of Science, addressed the meeting. Dr. Soule explained the series of symposia that of recent years have featured the annual meetings of Section N, and related the plans for a very comprehensive symposium on malaria to be given at the meeting of Section N to be held at Philadelphia in 1941, and invited the support and cooperation of the National Malaria Committee and of its membership as individuals in the undertaking. The invitation was accepted by unanimous vote.

The Secretary was instructed to ascertain the conditions under which the National Malaria Committee could secure affiliation with the American Association for the Advancement of Science. The discussion indicated sentiment favorable to such affiliation, providing it would in no manner impair the affiliation of the National Malaria Committee with the Southern Medical Association.

The Secretary-Treasurer submitted a report showing a total of one hundred and seventy-three active and nineteen honorary members on the roster, a total of one hundred and ninety-two. Since the last meeting two members were lost by death, none from resignation, and seven were dropped, while one honorary member was elected by the Committee, and fourteen active members were elected by the membership sub-committee. Total cash receipts of $548.96 were reported, with expenditures of $154.35, leaving a cash balance of $394.61. The result of the post card ballot of the membership showed a total of eighty-three ballots received, of which eighty-one approved the proposal to reserve in the treasury and expend as required an amount not to exceed $150.00 to assist in defraying the publication cost of the "Syllabus of Lectures on Malaria for Engineering Students," sponsored by the Sub-Committee on Engineering. The report was referred to the Sub-Committee on Auditing.

The report of the special Sub-Committee on Governmental Relations was submitted by the Chairman, Dr. J. N. Baker, Montgomery, Alabama, and was referred to the Sub-Committee on Resolutions for study and recommendations.

The report of the Sub-Committee on Malaria Prevention Activities was read by the Chairman, Dr. L. L. Williams, Jr., Washington, D. C., and was accepted and ordered filed.

The report of the Sub-Committee on Malaria Research entitled "Review of Recent Research on Drug Prophylaxis and Treatment of Malaria," prepared by Dr. H. C. Clark, Ancon, Canal Zone, was submitted by the Chairman, Dr. L. T. Coggeshall, New York, New York, was accepted and ordered filed.

The report of the Sub-Committee on Entomology was presented in abstract by Dr. E. Harold Hinman, Wilson Dam, Alabama, was accepted and ordered filed.

Report of the Sub-Committee on Engineering was presented by Mr. Nelson H. Rector, Jackson, Mississippi. The report related to completion of all arrangements with the American Society of Civil Engineers for the publication of the syllabus of lectures on malaria control, in the form of a report of a joint committee of the National Malaria Committee and the Division of Sanitary Engineering of the American Society of Civil Engineers. The report recommended the recognition of the Sub-Committee on Engineering as a joint committee of both bodies and authorized the joint committee to make any revision of the syllabus text considered necessary before final publication. The report was approved and ordered filed.

The motion was adopted to make available the further sum of $50.00 as the Committee's contribution to the publication cost of the syllabus. The Secretary was authorized to use his discretion in the distribution of the syllabus.

Dr. E. C. Faust, New Orleans, Louisiana, on behalf of the Sub-Committee on Epidemiology, read a summary entitled "Malaria Mortality in the Southern United States for the year 1937," and a recommendation from the Sub-Committee that the National Malaria Committee sponsor the publication of a treatise on the epidemiology of malaria in the United States. It was agreed to accept the report in principle and to instruct the Sub-Committee to cooperate and collaborate with Section N of the American Association for the Advancement of Science in the development of their symposium plans as being the means best calculated to achieve the objective proposed.

A report from the Sub-Committee on Statistics was accepted and ordered filed.

The report of the Auditing Committee, approving the report of the Secretary-Treasurer and his recommendation of an honorarium of $50.00 to the Secretary of the Secretary-Treasurer, was approved and ordered filed.

The Secretary-Treasurer was instructed to transfer the name of Dr. Frederick L. Hoffman from the active to the honorary membership roster.

The Sub-Committee on Resolutions introduced resolutions of tribute to the memory of deceased members, Dr. Paul Eaton, Jacksonville, Florida, and Dr. V. H. Bassett, Savannah, Georgia. The Secretary was instructed to transmit a copy of the resolutions to the families of the deceased.

The Sub-Committee on Nominations submitted the following nominations for officers, the Secretary being instructed to cast the unanimous ballot of the Committee for the nominees:

Honorary Chairman—Dr. L. O. Howard, Washington, D. C.
Chairman—Mr. L. M. Clarkson, Atlanta, Georgia.
Chairman-Elect—Mr. W. G. Stromquist, Chattanooga, Tennessee.
Vice-Chairman—Dr. L. T. Coggeshall, New York, New York.
Secretary-Treasurer—Dr. Mark F. Boyd, Tallahassee, Florida.

The Committee then adjourned until 2:00 p. m. Thursday.

Thursday, November 17, 2:00 p. m.

A joint scientific session of the National Malaria Committee and American Society of Tropical Medicine convened at the Municipal Auditorium, Oklahoma City, Dr. T. H. D. Griffitts, Chairman of the National Malaria Commitee, and Dr. Alfred C. Reed, Chairman-Elect of the American Society of Tropical Medicine, presiding.

Dr. Ernest Carroll Faust, Department of Tropical Medicine, Tulane University School of Medicine, New Orleans, Louisiana, read a paper entitled "What Life Insurance Companies Think About Malaria in the Southern United States."

Paper by Professor W. T. Dawson, University of Texas School of Medicine, Galveston Texas, and Dr. J. P. Sanders, Charity Hospital, Shreveport, Louisiana, entitled "A Two-Year Study of the Short Quinine Course in Malaria" (Lantern Slides), was read by Professor Dawson.

Dr. W. N. Bispham, Colonel, Medical Corps, U. S. Army, Headquarters, Third Corps Area, Baltimore, Maryland, read a paper entitled "Malaria in the Southern States," which was discussed

by Dr. Mark F. Boyd, Tallahassee, Florida, and Dr. L. L. Williams, Jr., Washington, D. C.

Dr. S. F. Kitchen, The Rockefeller Foundation, Tallahassee, Florida, read a paper entitled "The Differential Infection of Mature and Immature Erythrocytes by the Plasmodia of Human Malaria" (Lantern Slides).

Dr. L. T. Coggeshall, Rockefeller Foundation, New York, New York, read a paper entitled "The Cure of *Plasmodium knowlesi* Malaria in Rhesus Monkeys with Sulfanilamide and Their Susceptibility to Reinfection" (Lantern Slides), which was discussed by Dr. N. Paul Hudson, Columbus, Ohio.

After a brief recess following the scientific session, the National Malaria Committee reconvened in business session.

Dr. J. N. Baker, Montgomery, Alabama, Chairman of the Sub-Committee on Resolutions, presented the report from the special Sub-Committee on Governmental Relations, dealing with the problem arising from the opposition to malaria control projects expressed by various official and unofficial bodies interested in wild life. After much discussion the report with the recommendations was unanimously adopted.

The Secretary was instructed to express the Committee's appreciation for the attentions of the official representatives of the Oklahoma County Medical Association, Dr. L. A. Turley, Dr. H. D. Moor and Dr. D. B. McMullen.

The Committee then adjourned until 9:00 a. m. Friday.

Friday, November 18, 9:00 a. m.

The Committee convened at the Municipal Auditorium, Oklahoma City, and was called to order by the Chairman, Dr. T. H. D. Griffitts, Savannah, Georgia, who read his Chairman's Address entitled "Henry Rose Carter: The Man and Scientist" (Lantern Slides).

Mr. C. C. Kiker, Division of Malaria Control, Tennessee Valley Authority, Wilson Dam, Alabama, read a paper entitled "Importance of Reservoir Preparation in Mosquito Control on Impounded Waters" (Lantern Slides).

Dr. John E. Elmendorf, Jr., Rockefeller Foundation, Pensacola, Florida, read a paper entitled "Preliminary Report of Activities of the Malaria Division of the Escambia County, Florida, Health Department, with Special Reference to Cement Plant Operations."

Paper by Mr. Thomas F. Brackin, Jr., State Board of Health, Jackson, Mississippi, and Mr. Griffith E. Quinby, State Board of Health, Louisville, Kentucky, entitled "A Study of the Early Seasonal Emergence of *Anopheles quadrimaculatus* in the Lower Ohio-Mississippi River Valley" (Lantern Slides), was read by Mr. Brackin and was discussed by Mr. J. A. LePrince, Memphis, Tennessee, and Dr. E. Harold Hinman, Wilson Dam, Alabama.

Paper by Mr. Albert Weathersbee and Mr. Philip G. Hasell, State Board of Health, Columbia, South Carolina, entitled "Further Studies on the Vital Staining of Anopheline Larvae" (Lantern Slides), was read by Mr. Weathersbee.

Paper by Mr. R. S. Howard, Jr., State Board of Health, Atlanta, Georgia, entitled "A Comparative Evaluation of Paris Green and Pyrethrum Larvicides for Malaria Control in Georgia" (Lantern Slides), was read by Mr. J. M. Henderson and was discussed by Dr. Justin Andrews, Atlanta, Georgia, and Mr. L. M. Clarkson, Atlanta, Georgia.

Mr. R. Edward Bellamy, State Board of Health, Atlanta, Georgia, read a paper entitled "An Anopheline from Inland Georgia Resembling the Brackish-Water Race of *Anopheles crucians*."

Paper by Mr. W. A. Legwen and Mr. A. J. Kirby, Richmond County Health Department, Augusta, Georgia, entitled "The Practical Application of pH on Larvicidal Operations" (Lantern Slides), was read by Mr. Legwen and was discussed by Dr. Justin Andrews, Atlanta, Georgia.

The Committee then adjourned *sine die*.

AMERICAN SOCIETY OF TROPICAL MEDICINE

Meeting conjointly with Southern Medical Association.

Officers

President—Dr. Mark F. Boyd, Tallahassee, Florida.
President-Elect—Dr. Alfred C. Reed, San Francisco, California.
Vice-President—Dr. Asa C. Chandler, Houston, Texas.
Secretary-Treasurer—Dr. E. Harold Hinman, Wilson Dam, Alabama.
Editor—Dr. Charles F. Craig, San Antonio, Texas.

Tuesday, November 15, 2:00 p. m.

The Society met in the Municipal Auditorium, Oklahoma City, Oklahoma, and was called to order by the President, Dr. Mark F. Boyd, Tallahassee, Florida, who presided.

A feature of this scientific session was the Third Charles Franklin Craig Lecture on Tropical Medicine entitled "Progress in the Study of Infections Due to Bartonella and Rickettsia," by Dr. Richard P. Strong, Boston, Massachusetts.

Tuesday, November 15, 6:00 p. m.

The annual dinner and business meeting of the Council of the Society was held at the Huckins Hotel.

Wednesday, November 16, 9:30 a. m.

The Society met in joint session with the Section on Medicine of the Southern Medical Association, Dr. Asa C. Chandler, Houston, Texas, Vice-President of the American Society of Tropical Medicine, and Dr. Randolph Lyons, New Orleans, Louisiana, Vice-Chairman of the Section on Medicine of the Southern Medical Association, presiding jointly. The following symposium on "Newer Clinical Aspects of Deficiency Diseases" was presented:

(a) Dr. John B. Youmans, Nashville, Tennessee, "Vitamin A Deficiency."

(b) Dr. George C. Shattuck, Boston, Massachusetts, "Clinical Picture of B_1 Hypovitaminosis."

(c) Dr. Tom D. Spies and Dr. William Bennett Bean, Cincinnati, Ohio, "Pellagra and B_2 Hypovitaminosis."

(d) Dr. W. J. Dann, Durham, North Carolina, "Possible Clinical Significance of Other Vitamin B Components."

(e) Dr. Alfred C. Reed, San Francisco, California, "Sprue and Allied Clinical Conditions."

Wednesday, November 16, 2:00 p. m.

The Society met in the Municipal Auditorium and was called to order by the President, Dr. Boyd, who presided. A brief annual business meeting was held, followed by a scientific session.

Thursday, November 17, 12:00 noon

The annual luncheon of the Society was held at the Huckins Hotel, attended by seventy-six members and guests of the Society. The President, Dr. Mark F. Boyd, Tallahassee, Florida, read his President's Address entitled "The Malaria Problem: Retrospect and Prospect."

Thursday, November 17, 2:00 p. m.

The Society met in the Municipal Auditorium, Oklahoma City, in joint session with the National Malaria Committee. Dr. Alfred C. Reed, President-Elect of the American Society of Tropical Medicine, San Francisco, California, and Dr. T. H. D. Griffitts, Chairman of the National Malaria Committee, Savannah, Georgia, presided.

Thursday, November 16, 7:00 p. m.

The American Academy of Tropical Medicine held its fifth annual dinner at the Huckins Hotel. All members of the American Society of Tropical Medicine were cordially invited to attend. Dr. Henry E. Meleney, Nashville, Tennessee, was toastmaster. The President of the Academy, Dr. Joseph F. Siler, Colonel, Medical Corps, U. S. Army, Washington, D. C., delivered his President's Address entitled "Some of the Unsolved Problems in Research and Disease Control in the Tropics."

Wednesday, November 16

At the business session of the Society the following officers were elected for the ensuing year:

President—Dr. Alfred C. Reed, San Francisco, California.
President-Elect—Dr. L. L. Williams, Jr., Washington, D. C.
Vice-President—Dr. S. S. Cook, Norfolk, Virginia.
Secretary-Treasurer—Dr. E. Harold Hinman, Wilson Dam, Alabama.
Editor—Dr. Charles F. Craig, San Antonio, Texas.

Councilors:

Dr. T. T. Mackie, New York, New York.
Dr. R. A. Lambert, New York, New York.
Dr. N. Paul Hudson, Columbus, Ohio.
Dr. Mark F. Boyd, Tallahassee, Florida.
Dr. M. H. Soule, Ann Arbor, Michigan.

Dr. J. S. Simmons, Boston, Massachusetts.
Dr. Henry E. Meleney, Nashville, Tennessee.
Dr. L. T. Coggeshall, New York, New York.

With the completion of the program on Thursday the Society adjourned to hold its next annual meeting in conjunction with the annual meeting of the Southern Medical Association in Memphis, Tennessee, in November 1939.

SOUTHERN ASSOCIATION OF ANESTHETISTS

Meeting conjointly with Southern Medical Association

Officers

President—Dr. Joseph B. Bogan, Washington, D. C.
Vice-President—Dr. Russell F. Bonham, Houston, Texas.
Acting Secretary-Treasurer—Dr. Dougal M. Dollar, Louisville, Kentucky.

Wednesday, November 16, 9:00 a. m.

The Southern Association of Anesthetists met at the University of Oklahoma School of Medicine, Oklahoma City. The following presentations were made:

Dr. R. Douglas Sanders, Louisville, Kentucky, "Cyclopropane Anesthesia."

Dr. B. H. Harms, Omaha, Nebraska, "Cyclopropane Anesthesia from the Standpoint of the Anesthetist."

Dr. W. John Pangman, El Paso, Texas, "A Surgeon Views Avertin as a Basal Anesthetic."

Dr. Fred E. Woodson, Tulsa, Oklahoma, "One Thousand Tonsillectomies, Using Avertin as a Basal Anesthetic."

Dr. Herman Mahaffey, Louisville, Kentucky, "Symptoms and Control of Traumatic Shock."

Wednesday, November 16, 2:00 p. m.

The Southern Association of Anesthetists met at the University of Oklahoma School of Medicine, Oklahoma City. The following presentations were made:

Dr. B. M. Carraway, Birmingham, Alabama, "Intravenous Anesthesia with Nasal Oxygen: A Clinical Study of Over Twenty-Five Hundred Cases."

Dr. Benjamin Robbins, Nashville, Tennessee, "Cyclopropane: Experimental Studies of Its Action on the Heart."

Dr. Russell F. Bonham, Houston, Texas, "Cyclopropane Anesthesia: Further Observations Especially from an Allergic Standpoint."

Dr. Joseph B. Bogan, Washington, D. C., "Cyclopropane and Other Agents in One Thousand Consecutive Anesthesias and Analgesias: A Brief Comparison and Practical Consideration of Agents, Methods and Results."

Dr. Frederick V. Emmert, St. Louis, Missouri, "Local Anesthesia in Obstetrics and Gynecology."

Dr. Chapman Reynolds, New Orleans, Louisiana, "The Dangers of Intravenous Barbiturate Anesthesia from the Pharmacological Standpoint."

At the business session the following officers were elected:

President—Dr. R. F. Bonham, Houston, Texas.
President-Elect—Dr. T. L. Tidmore, Atlanta, Georgia.
Vice-President—Dr. R. D. Sanders, Louisville, Kentucky.
Secretary-Treasurer—Dr. Dougal M. Dollar, Louisville, Kentucky.

AMERICAN ACADEMY OF PEDIATRICS
Region 2

Meeting conjointly with Southern Medical Association

Officers

Chairman—Dr. Edward Clay Mitchell, Memphis, Tennessee.
Oklahoma City Committee on Arrangements—Dr. Clark H. Hall, Chairman; Dr. Carroll M. Pounders, Vice-Chairman.

Wednesday, November 16

The American Academy of Pediatrics, Region 2, met at the Skirvin Hotel, Oklahoma City. Beginning at 9:00 a. m., the following presentations were made:

Dr. M. Hines Roberts, Atlanta, Georgia, "Intracranial Hemorrhage."

Dr. Wilburt C. Davison, Durham, North Carolina, "Acute Abdomen in Children."

Dr. Horton Casparis, Nashville, Tennessee, "Medical Aspects of Child Training."

Dr. Clifford G. Grulee, Evanston, Illinois, "Feeding of the New Born."

Dr. Frank P. Gengenbach, Denver, Colorado, "The Tuberculosis Problem in Pediatrics."

Dr. Hugh Leslie Moore, Dallas, Texas, "Everyday Pediatric Problems."

Dr. Chas. A. Aldrich, Winnetka, Illinois, "The Role of Gratification in Early Development."

Dr. Henry G. Poncher, Chicago, Illinois, "Clinical Implications of Recent Advances in Pediatric Hematology."

Round Table, 1:30 to 3:00 p. m.

(A) Dr. Henry G. Poncher, Chicago, Illinois, "Anemia in Children," assisted by Dr. L. W. Diggs, Memphis, Tennessee, and Dr. Jay M. Arena, Durham, North Carolina.

(B) Dr. John J. Shea, Memphis, Tennessee, "The Tonsil Question," assisted by Dr. Wilburt C. Davison, Durham, North Carolina; Dr. Claude C. Cody, Houston, Texas; and Dr. W. W. Quillian, Coral Gables, Florida.

Round Table, 3:00 to 4:30 p. m.

(C) Dr. Chas. A. Aldrich, Winnetka, Illinois, "Nephritis in Children with Special Reference to Treatment," assisted by Dr. Hugh L. Dwyer, Kansas City, Missouri; Dr. Russell Blattner, St. Louis, Missouri; and Dr. Jerome S. Harris, Durham, North Carolina.

(D) Dr. Millard F. Arbuckle, St. Louis, Missouri, "Bronchoscopy and Diseases of the Chest," assisted by Dr. Brian B. Blades, St. Louis, Missouri.

At the business session following the scientific program announcement was made that the National meeting of the Academy would be held in Cincinnati in November 1939. It was voted to have the meeting of Region 2 in the Spring of 1939 at Memphis, Tennessee.

ALLERGY CLINIC AND ROUND TABLE
Unofficial

Thursday, November 17, 9:00 a. m.

An Allergy Clinic and Round Table, unofficial, was held at the University of Oklahoma School of Medicine, Dr. Ralph Bowen, Chairman, Oklahoma City, presiding.

The following program was rendered:

Dr. E. Rankin Denny, Tulsa, Oklahoma, "Allergic and Non-Allergic Functional Gastro-Enteropathies."

Dr. Geo. J. Seibold, Oklahoma City, Oklahoma, "Asthmatic Problem Secondary to Fungi."

Dr. Fannie Lou Brittain Leney, Oklahoma City, Oklahoma, "Neurological Manifestations Due to Allergy."

Dr. Ralph Bowen, Oklahoma City, Oklahoma, "Urticarial Problem Secondary to Karaya Gum. Light Sensitivity: Hydro-Aestivale."

Dr. W. N. Weaver, Muskogee, Oklahoma, "History Taking in Allergy: Information Obtained from Two Hundred Histories Correlated with Skin Tests."

Dr. Nesbitt L. Miller, Oklahoma City, Oklahoma, "The Allergic Headache."

Dr. Ray M. Balyeat, Oklahoma City, Oklahoma, "Critical Evaluation of the Use of Iodized Oil in Asthma and Bronchiectasis Over a Period of Five Years."

At 12:30 noon, following the Clinic, a luncheon and round table discussion was held at the University Club. During the round table discussion Dr. Samuel M. Feinberg, Chicago, Illinois, presented the subject "The Relationship of Fungi to Everyday Allergy."

WOMAN'S AUXILIARY TO THE SOUTHERN MEDICAL ASSOCIATION

Officers

President—Mrs. Luther Bach, Bellevue, Kentucky.
President-Elect—Mrs. W. K. West, Oklahoma City, Oklahoma.
First Vice-President—Mrs. T. R. W. Wilson, Greenville, South Carolina.
Second Vice-President—Mrs. E. W. Veal, South Jacksonville, Florida.
Recording Secretary—Mrs. E. H. Hargis, Birmingham, Alabama.
Corresponding Secretary—Miss Alma Jean Bach, Bellevue, Kentucky.
Treasurer—Mrs. George J. Taquino, New Orleans, Louisiana.
Historian—Mrs. James W. Warren, New Orleans, Louisiana.
Parliamentarian—Mrs. M. Pinson Neal, Columbia, Missouri.

Wednesday, November 16, 8:00 a. m.

The Executive Board of the Woman's Auxiliary to the Southern Medical Association met at breakfast in a private dining room at the Oklahoma Biltmore Hotel, Oklahoma City, Oklahoma, the Southern Medical Association being host. The President, Mrs. Luther Bach, Bellevue, Kentucky, presided.

There were sixteen members of the Board present. The roll call showed ten states represented.

In the absence of the Recording Secretary, Mrs. E. H. Hargis, Birmingham, Alabama, Miss Grace Stroud, Louisville, Kentucky, was elected to fill the office for the duration of the meeting.

Minutes of the Post-Convention Board meeting held at New Orleans were read and adopted.

The President appointed the following Nominating Committee: Mrs. Frank N. Haggard, Chairman, San Antonio, Texas; Mrs. F. Redding Hood, Oklahoma City, Oklahoma; Mrs. W. T. Wootton, Hot Springs National Park, Arkansas; Mrs. H. C. Ricks, Jackson, Mississippi; and Mrs. Eustace A. Allen, Atlanta, Georgia.

The President appointed the following Resolutions Committee: Mrs. Charles E. Oates, Chairman, North Little Rock, Arkansas; Mrs. Arthur A. Herold, Shreveport, Louisiana; and Mrs. George J. Taquino, New Orleans, Louisiana.

The President appointed the following Auditing Committee to examine the Treasurer's report: Mrs. H. Leslie Moore, Chairman, Dallas, Texas; Mrs. Oliver W. Hill, Knoxville, Tennessee; and Mrs. Harvey F. Garrison, Jackson, Mississippi.

Mrs. Charles C. Tomlinson, Omaha, Nebraska, President of the Woman's Auxiliary to the American Medical Association, was presented to the Executive Board.

Mrs. George J. Taquino, Treasurer, New Orleans, Louisiana, presented her report showing a balance of $142.15 on hand, and $60.70 in the Jane Todd Crawford Memorial Fund.

Mrs. Charles P. Corn, Greenville, South Carolina, Chairman of the Budget Committee, presented the budget. It was moved and carried that any part of the $200.00 budget not used by the Committees be placed in the President's Discretionary Fund.

Report of the Jane Todd Crawford Committee, Mrs. C. B. Erickson, Chairman, Shreveport, Louisiana, was read by Mrs. Arthur A. Herold, Shreveport, Louisiana, in the absence of the Chairman. Mrs. A. T. McCormack, Louisville, Kentucky, reported that Kentucky had completed its pledge of $1,000.00 to the Jane Todd Crawford Memorial Fund and was presenting it at this meeting of the Woman's Auxiliary to the Southern Medical Association in honor of its Kentucky President, Mrs. Luther Bach. The reports were accepted with a rising vote of thanks. It was moved and carried that a special committee of three be appointed to study the types of memorials suggested by the various states and report at the next annual meeting.

The Executive Board meeting then adjourned.

Wednesday, November 16, 10:00 a. m.

The fifteenth annual meeting of the Woman's Auxiliary to the Southern Medical Association was held in the Crystal Room of the Skirvin Hotel, Oklahoma City, Oklahoma, and was called to order by the President, Mrs. Luther Bach, Bellevue, Kentucky, who presided.

Rev. Frank J. Scribner, D.D., Pastor Pilgrim Congregational Church, Oklahoma City, Oklahoma, delivered the invocation.

Mrs. Lewis J. Moorman, Oklahoma City, Oklahoma, General Chairman of Entertainment, gave an Address of Welcome, which was responded to by Mrs. Arthur T. McCormack, Louisville, Kentucky.

Greetings were brought from the Woman's Auxiliary to the Oklahoma County Medical Association by Mrs. H. Dale Collins, President, and from the Woman's Auxiliary to the Oklahoma State Medical Association by Mrs. George H. Garrison, President.

Mrs. Frank N. Haggard, San Antonio, Texas, Organization Chairman of the Woman's Auxiliary to the American Medical Association, asked that auxiliary members make an effort to interest every physician's wife in auxiliary work.

Mrs. W. K. West, President-Elect, Oklahoma City, Oklahoma, was presented.

Reports of the following standing committees were presented and accepted:

Auditing, Mrs. H. Leslie Moore, Dallas, Texas, Chairman, reported that the Committee had examined the Treasurer's report and found it correct.

Research in Medicine, read by Mrs. Arthur A. Herold, in the absence of the Chairman, Mrs. S. A. Collom, Sr., Texarkana, Texas.

Jane Todd Crawford, read by Mrs. Arthur A. Herold in the absence of the Chairman, Mrs. C. D. Erickson, Shreveport, Louisiana. Mrs. Herold then introduced Mrs. H. V. Usher, Sedalia, Kentucky, President of the Woman's Auxiliary to the Kentucky State Medical Association, who presented a check for $1,050.00 to the Woman's Auxiliary to the Southern Medical Association to be applied to the Jane Todd Crawford Memorial Fund.

Budget, Mrs. Charles P. Corn, Greenville, South Carolina.

Custodian of Records, Mrs. Stephen C. McCoy, Chairman, Louisville, Kentucky, was read by Mrs. P. E. Blackerby, Louisville, Kentucky, in the absence of the Chairman.

Mrs. H. Dale Collins, President of the Woman's Auxiliary to the Oklahoma County Medical Association, announced the entertainment features for visiting ladies.

Mrs. Olin S. Cofer, Atlanta, Georgia, Chairman of the In Memoriam Committee, conducted the In Memoriam Service.

The meeting then adjourned.

Wednesday, November 16, 12:00 noon

The annual luncheon of the Woman's Auxiliary was held in the Silver Glade Room, Skirvin Tower Hotel, the President, Mrs. Luther Bach, presiding.

Mrs. William Hibbitts, Texarkana, Arkansas, acted as toastmistress, introducing the speakers of the occasion, the state presidents, the past presidents and the President-Elect.

Addresses were made by Dr. Irvin Abell, Louisville, Kentucky, President of the American Medical Association and Past President of the Southern Medical Association; Dr. Arthur T. McCormack, Louisville, Kentucky, Past President of the American Public Health Association and State Health Officer of Kentucky; and Mrs. Charles C. Tomlinson, Omaha, Nebraska, President of the Woman's Auxiliary to the American Medical Association.

The President-Elect, Mrs. W. K. West, Oklahoma City, Oklahoma, was presented.

The program for the luncheon session was concluded with an interesting and beautiful fashion show.

Thursday, November 17, 9:30 a. m.

The concluding session of the annual meeting of the Woman's Auxiliary to the Southern Medical Association was held in the main dining room of the Oklahoma Biltmore Hotel, Oklahoma City, the President, Mrs. Luther Bach, presiding.

Minutes of the first session were read and approved.

Mrs. Ralph O. Early, Oklahoma City, Oklahoma, Chairman of the Registration Committee, reported a total registration of 641 ladies attending with twenty-nine states and the District of Columbia represented.

Mrs. M. Pinson Neal, Columbia, Missouri, Parliamentarian, presided when the President gave her annual report. The report was accepted with a rising vote of thanks.

The President announced the appointment of the following Special Committee to study the types of memorials suggested by the various states for the Jane Todd Crawford project, the Committee to report at the next annual meeting: Mrs. Arthur T. McCormack, Chairman, Louisville, Kentucky; Mrs. C. W. Garrison, Little Rock, Arkansas; and Mrs. Arthur A. Herold, Shreveport, Louisiana.

Reports from the following states were read by the Councilors, the reports being accepted as read: Arkansas, Georgia, Kentucky, Louisiana, Mississippi, Missouri, Oklahoma, Tennessee, and Texas.

Mrs. Arthur A. Herold, Shreveport, Louisiana, Chairman of the Legislative Committee of the Woman's Auxiliary to the American Medical Association, explained the plan for study groups on state medicine as outlined by the National Auxiliary. Another project of the National Auxiliary is to have every physician's wife a registered voter.

The Nominating Committee presented their report, the Secretary being instructed to cast the unanimous vote for the nominees (all are Members of the Executive Board):

President—Mrs. W. K. West, Oklahoma City, Oklahoma.
President-Elect—Mrs. Charles P. Corn, Greenville, South Carolina.
First Vice-President—Mrs. Lewis J. Moorman, Oklahoma City, Oklahoma.
Second Vice-President—Mrs. Olin S. Cofer, Atlanta, Georgia.
Recording Secretary—Miss Grace Stroud, Louisville, Kentucky.
Corresponding Secretary—Mrs. Allen G. Gibbs, Oklahoma City, Oklahoma.
Treasurer—Mrs. K. W. Cosgrove, Little Rock, Arkansas.
Historian—Mrs. W. W. Crawford, Hattiesburg, Mississippi.
Parliamentarian—Mrs. Gordon Ira, Jacksonville, Florida.

The newly elected officers were installed by Mrs. C. W. Garrison, Little Rock, Arkansas, a Past President.

The retiring President, Mrs. Luther Bach, then presented the gavel to the incoming President, Mrs. W. K. West, Oklahoma City, Oklahoma, who spoke briefly.

Mrs. Charles E. Oates, Chairman of the Resolutions Committee, presented an all inclusive resolution of thanks and appreciation to all those who had a part in making the Oklahoma City meeting such a success, the resolution being unanimously adopted.

The annual meeting of the Auxiliary adjourned to meet in Memphis, Tennessee, November 1939.

Thursday, November 17, 11:30 a. m.

The Executive Board of the Woman's Auxiliary to the Southern Medical Association met at the Oklahoma Biltmore Hotel, the President, Mrs. W. K. West, Oklahoma City, Oklahoma, presiding.

The President told of her plans for the coming year.

It was moved and carried that the bill for the flowers for the In Memoriam Service be approved.

Upon motion a letter of thanks was ordered sent to the Woman's Auxiliary to the Kentucky State Medical Association for their contribution of $1,050.00 to the Jane Todd Crawford Memorial Fund.

The Executive Board meeting then adjourned.

CHAIRMEN OF STANDING COMMITTEES, Woman's Auxiliary to the Southern Medical Association
(All are Members of the Executive Board)

Memorial—Mrs. Amos H. Stevens, Fairmont, West Va.
Research—Mrs. S. A. Collom, Sr., Texarkana, Tex.
Jane Todd Crawford—Mrs. Luther Bach, Bellevue, Ky.
Resolutions—Mrs. August A. Wearner, St. Louis, Mo.
Budget—Mrs. Harvey F. Garrison, Jackson, Miss.
Custodian of Records—Mrs. Stephen C. McCoy, Louisville, Ky.

COUNCIL, Woman's Auxiliary to the Southern Medical Association
(All are Members of the Executive Board)

Expire 1939—
Oklahoma—Mrs. F. Redding Hood, Oklahoma City.
South Carolina—Mrs. Jesse Willson, Spartanburg.
Tennessee—Mrs. W. A. Shelton, Knoxville.
Texas—Mrs. H. Leslie Moore, Dallas.
Virginia—Mrs. Southgate Leigh, Norfolk.
West Virginia—Mrs. V. E. Holcombe, Charleston.

Expire 1940—
Alabama—Mrs. L. W. Roe, Mobile.
Arkansas—Mrs. S. A. Collom, Jr., Texarkana.
District of Columbia—Mrs. A. Barnes Hooe, Washington.
Florida—Mrs. E. W. Veal, South Jacksonville.
Georgia—Mrs. L. W. Williams, Savannah.

Expire 1941—
Kentucky—Mrs. John M. Blades, Butler.
Louisiana—Mrs. Wiley R. Buffington, New Orleans.
Maryland—
Mississippi—Mrs. R. H. Clark, Hattiesburg.
Missouri—Mrs. M. Pinson Neal, Columbia.
North Carolina—Mrs. J. Buren Sidbury, Wilmington.

PAST PRESIDENTS, Woman's Auxiliary to the Southern Medical Association
(All are Members of the Executive Board)

1925, Mrs. E. H. Cary, Dallas, Texas.
1926, Mrs. D. J. Williams, Gulfport, Miss.
1927, Mrs. Oscar M. Marchman, Dallas, Tex.
1928, Mrs. A. T. McCormack, Louisville, Ky.
1929, Mrs. C. W. Garrison, Little Rock, Ark.
1930, Mrs. James N. Brawner, Atlanta, Ga.
1931, Mrs. S. A. Collom, Sr., Texarkana, Tex.
1932, Mrs. Chas. E. Oates, North Little Rock, Ark.
1933, Mrs. Arthur A. Herold, Shreveport, La.
1934, Mrs. Southgate Leigh, Norfolk, Va.
1935, Mrs. J. Bonar White, Atlanta, Ga.
1936, Mrs. Oliver W. Hill, Knoxville, Tenn.
1937, Mrs. Frank N. Haggard, San Antonio, Tex.
1938, Mrs. Luther Bach, Bellevue, Ky.

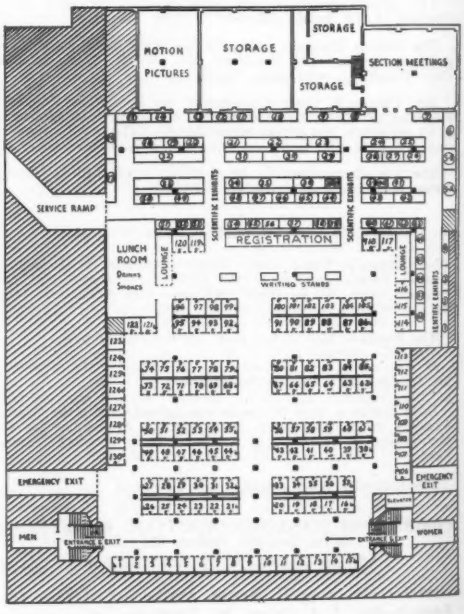
TECHNICAL EXHIBITS

The following are the business firms who had exhibits at the Oklahoma City meeting:

	Space Nos.
Abbott Laboratories, North Chicago, Ill.	121
Agfa Ansco Corporation, Binghamton, N. Y.	60- 61
Aloe Company, A. S., St. Louis, Mo.	12-13-14-15
American Hospital Supply Corporation, Chicago, Ill.	29
American Optical Company, Southbridge, Mass.	123-124
Appleton Century Company, D., New York, N. Y.	11
Arlington Chemical Company, Yonkers, N. Y.	126
Armour Laboratories, The, Chicago, Ill.	23
Ayerst, McKenna & Harrison, Ltd., Montreal, Canada	28

	Space Nos.
Aznoe's National Physicians Exchange, Chicago, Ill.	76
Bard-Parker Company, Inc., Danbury, Conn.	44
Bausch & Lomb Optical Company, Rochester, N. Y.	70– 71
Becton, Dickinson & Company, Rutherford, N. J.	32
Bilhuber-Knoll Corporation, Jersey City, N. J.	78– 79
Borden Sales Company, Inc., The, New York, N. Y.	96
Burdick Corporation, The, Milton, Wis.	48
Burroughs Wellcome & Co., (USA), Inc., New York, N. Y.	112
Carnation Company, Oconomowoc, Wis.	127–128
Carnrick Company, G. W., Newark, N. J.	35
Castle Company, Wilmot, Rochester, N. Y.	27
Caviness Surgical Company, Oklahoma City, Okla.	4
Ciba Pharmaceutical Products, Inc., Summit, N. J.	109–110
Clapp, Incorporated, Harold H., Rochester, N. Y.	81– 82
Davies, Rose & Company, Ltd., Boston, Mass.	5
Davis & Geck, Inc., Brooklyn, N. Y.	122
Davis Sales Company, R. B., Hoboken, N. J.	74
De Puy Manufacturing Company, Warsaw, Ind.	37
De Vilbiss Company, The, Toledo, Ohio	34
Doak Company, The, Cleveland, Ohio	47
Duke Laboratories, Long Island City, N. Y.	113
Eastman Kodak Company, Rochester, N. Y.	117–118
Fischer & Company, H. G., Chicago, Ill.	30– 31
Foregger Company, The, New York, N. Y.	130
General Electric X-Ray Corporation, Chicago, Ill.	92-93-94-95
General Foods Corporation, New York, N. Y.	33
Gerber Products Company, Fremont, Mich.	3
Gradwohl Laboratories, St. Louis, Mo.	36
Heinz Company, H. J., Pittsburgh, Pa.	59
Horlick's Malted Milk Corporation, Racine, Wis.	106
Hynson, Westcott & Dunning, Inc., Baltimore, Md.	68– 69
Johnson & Johnson, New Brunswick, N. J.	8– 9
Jones Metabolism Equipment Company, Chicago, Ill.	129
Kelley-Koett Mfg. Co., Inc., The, Covington, Ky.	7
Lederle Laboratories, Inc., New York, N. Y.	80
Lilly & Company, Eli, Indianapolis, Ind.	86-87-88-89-90-91
Lippincott Company, J. B., Philadelphia, Pa.	99
M and R Dietetic Laboratories, Inc., Columbus, Ohio	84– 85
Macmillan Company, The, New York, N. Y.	102
Majors Company, J. A., New Orleans, La., and Dallas, Tex.	21– 22
McKesson Appliance Company, Toledo, Ohio	51
Mead Johnson & Company, Evansville, Ind.	114-115-116
Medical Bureau, The, Chicago, Ill.	103
Mellin's Food Company, Boston, Mass.	67
Merrell Company, The Wm. S., Cincinnati, Ohio	72– 73
Mosby Company, C. V., St. Louis, Mo.	100
Mueller & Company, V., Chicago, Ill.	6
Parke, Davis & Company, Detroit, Mich.	16-17-18-19-20
Pet Milk Company, St. Louis, Mo.	39– 40
Petrolagar Laboratories, Inc., Chicago, Ill.	119–120
Picker X-Ray Corporation, New York, N. Y.	1– 2
Prior Company, Inc., W. F., Hagerstown, Md.	38
Puritan Compressed Gas Corporation, Kansas City, Mo.	64
Radium Chemical Company, New York, N. Y.	46
Richards Manufacturing Company, Memphis, Tenn.	49
S.M.A. Corporation, Chicago, Ill.	101
Sanborn Company, Cambridge, Mass.	45
Sandoz Chemical Works, Inc., New York, N. Y.	75
Saunders Company, W. B., Philadelphia, Pa.	21– 22
Scanlon-Morris Company, Madison, Wis.	10
Schering Corporation, Bloomfield, N. J.	104–105
Scientific Sugars Company, Columbus, Ind.	50
Searle & Company, G. D., Chicago, Ill.	97– 98
Sharp & Dohme, Philadelphia, Pa.	52-53-54-55
Smith, Kline & French Laboratories, Philadelphia, Pa.	65– 66
Spencer Lens Company, Buffalo, N. Y.	125
Squibb & Sons, E. R., New York, N. Y.	83
Standard X-Ray Company, Chicago, Ill.	111
Stearns & Company, Frederick, Detroit, Mich.	25– 26
Storz Instrument Company, St. Louis, Mo.	24
Taylor Instrument Companies, Rochester, N. Y.	57–58
U. S. Vitamin Corporation, New York, N. Y.	77
Westinghouse X-Ray Co., Inc., Long Island City, N. Y.	107–108
White Laboratories, Inc., Newark, N. J.	56
Winthrop Chemical Company, New York, N. Y.	62– 63
Wyeth & Brother, Inc., John, Philadelphia, Pa.	41-42-43

Exhibit Diagram, Oklahoma City Meeting—Technical and Scientific Exhibits



Book Reviews

Continued from page 93

The 1938 Year Book of Physical Therapy. Edited by Richard Kovacs, M.D., Clinical Professor and Director of Physical Therapy, New York Polyclinic Medical School and Hospital; Attending Physical Therapist, Manhattan State, Harlem Valley State and West Side Hospitals. 486 pages, illustrated. Chicago: The Year Book Publishers, Inc., 1938. Cloth $2.50.

A welcome addition to the Practical Medicine Series is this book on physical therapy. Dr. Richard Kovacs as the editor is a happy choice, as he is pre-eminently fitted by his long experience in this field to select the most important literature of the year. All phases of physical therapy are considered and the volumes contain 323 contributions, the greater majority being from authors in this country. The practitioner who reads these articles will at once be impressed with the progress that has been made in this specialty and the value that this form of therapy can contribute to his practice.

Southern Medical News

NEW ORLEANS GRADUATE MEDICAL ASSEMBLY

The Second Annual Meeting of the New Orleans Graduate Medical Assembly will be held in New Orleans at the Roosevelt Hotel, February 6-7-8-9. There will be clinical sessions with presentations by eighteen outstanding clinicians and teachers from leading medical centers of the country, and round table luncheons each day. There will be scientific and technical exhibits. All sessions and exhibits will be held at the Roosevelt Hotel. Officers of the Assembly are: Dr. John H. Musser, President; Dr. Hilliard E. Miller, First Vice-President; Dr. Henry W. E. Walther, Second Vice-President; Dr. Maurice Lescale, Third Vice-President; Dr. Francis E. LeJeune, Treasurer; Dr. M. M. Hattaway, Secretary; Dr. Emmett L. Irwin, Director of Clinics; and Dr. William H. Gillentine and Dr. Robert F. Sharp, Assistant Directors of Clinics.

MID-SOUTH POST GRADUATE MEDICAL ASSEMBLY

The Annual Meeting of the Mid-South Post Graduate Medical Assembly will be held at Memphis, Tennessee, February 14, 15, 16 and 17 at the Peabody Hotel. There will be clinical sessions with presentations by outstanding clinicians and teachers from leading medical centers of the country with round table luncheons. There will be scientific and technical exhibits. Officers of the Assembly are: Dr. L. W. Long, Jackson, Mississippi, President; Dr. H. Fay H. Jones, Little Rock, Arkansas, President-Elect; Dr. A. F. Cooper, Memphis, Tennessee, Secretary-Treasurer; Dr. C. H. Sanford, Memphis, Tennessee, Chairman of Program Committee; and Dr. Gilbert J. Levy, Memphis, Tennessee, Director of Exhibits.

INTERNATIONAL POST-GRADUATE MEDICAL ASSEMBLY

The Annual Meeting of the International Post-Graduate Medical Assembly of Southwest Texas will be held at San Antonio, January 24, 25 and 26. There will be clinical sessions with presentations by sixteen outstanding clinicians and teachers from leading medical centers in this country and Mexico. Officers of the Assembly are: Dr. G. A. Pagenstecher, President; Dr. C. C. Cade, President-Elect; Dr. E. M. McPeak, First Vice-President; Dr. Asa Beach, Second Vice-President; Dr. Harry McC. Johnson, Secretary-Treasurer; and Dr. W. W. Bondurant, Jr., Chairman of Program Committee; all of San Antonio.

ATLANTA GRADUATE MEDICAL ASSEMBLY

The Second Annual Meeting of the Atlanta Graduate Medical Assembly will be held at Atlanta, January 16, 17, 18 and 19. There will be clinical sessions and presentations by outstanding clinicians and teachers from leading medical centers of the country.

ALABAMA

The Jefferson County Medical Society, Birmingham, has elected the following officers for next year: Dr. W. B. Hardy, President, Birmingham; Dr. C. O. King, Birmingham, Vice-President; and Dr. R. A. Hamrick, Birmingham, Secretary-Treasurer.

The George Eaves Clinic in Birmingham, in memory of Dr. George Eaves, organizer of the Jefferson County Anti-Tuberculosis Association, organizer of the Alabama Tuberculosis League, and who established the first tuberculosis sanitarium in Alabama and also established the first free tuberculosis clinic in Alabama, was formally opened and dedicated Sunday, November 27.

The Talladega County Medical Society has elected the following officers for the coming year: Dr. K. Y. Evans, Sylacauga, President; Dr. C. L. Salter, Talladega, Vice-President.

Dr. J. B. Graham, formerly of Talladega, has moved to Atmore.

Dr. Claud D. Johnson, Montgomery, has opened offices in the Bell Building.

Dr. H. E. Barker, formerly Health Officer of Bullock County, has opened offices in Boaz.

Dr. Claude C. Blackwell, Birmingham, and Miss Mary Latham Rowland, Washington, North Carolina, were married in November.

Dr. C. L. Lawson, Acmar, and Dr. Nettie M. Black, Charlotte, North Carolina, were married November 30.

DEATHS

Dr. Samuel L. Ledbetter, Sr., Birmingham, aged 83, died November 30.

Dr. M. M. Nolan, Birmingham, aged 51, died in November from a heart attack.

Dr. A. J. Farley, Birmingham, aged 82, died recently.

Dr. Walter C. Head, Bessemer, aged 63, died September 3 of carcinoma of the pancreas.

Dr. Ernest Bonner, Camden, aged 63, died September 19 of myocarditis.

Dr. James Augustus Simpson, Florence, aged 61, died September 27 of cerebral hemorrhage and arteriosclerosis.

Dr. Aaron Albert York, Empire, aged 59, died September 24 of heart disease, hypertension and arteriosclerosis.

ARKANSAS

Dr. William Hibbitts, Texarkana, was elected Second Vice-President of the Southern Medical Association at the recent meeting in Oklahoma City.

Dr. O. J. T. Johnston, Batesville, has been made President of the Country Club of that city.

Dr. S. W. Douglas, Eudora, has been made President of the Eudora Chamber of Commerce.

Dr. James B. Tucker, formerly of Rutherford, Tennessee, has been made Director of the Benton County Health Unit with headquarters in Bentonville.

The Third Councilor District Medical Society has elected the following officers for the coming year: Dr. M. C. John, Stuttgart, President; Dr. L. E. Biles, Augusta, Vice-President; Dr. S. A. Drennen, Stuttgart, Secretary-Treasurer.

The Prairie County Medical Society has elected the following officers for the coming year: Dr. W. H. Crockett, Biscoe, President; Dr. Edward Adams, Hazen, President-Elect; Dr. W. J. B. Williams, Des Arc, Vice-President; Dr. J. C. Gilliam, Des Arc, Secretary-Treasurer.

Dr. Ulys Jackson, Harrison, was recently made Medical Director of District Fourteen of the State Department of Health with headquarters in Marshall.

Dr. Ernest L. Thompson, Hot Springs National Park, has been

placed in charge of the Garland County Health Department to succeed the late Dr. James F. Merrit.

Dr. K. K. Kimberlin, Tuckerman, has been made a Steward of the Methodist Church of that city.

Dr. N. E. Murphy and Dr. W. L. Boswell, Clarendon, have been made Stewards of the Methodist Church of that city.

Dr. S. S. Beaty has been made a Steward of the Methodist Church of England.

Dr. Raymond T. Smith, Fort Smith, has been made Vice-President of the Kiwanis Club of that city.

Dr. E. F. Ellis, Fayetteville, has been elected President of the Frisco System Medical Association.

Dr. H. Fay H. Jones, Little Rock, has been made a Governor for the American College of Surgeons.

Dr. E. C. Gay, Little Rock, has been made a Director of the Kiwanis Club of that city.

The Fort Smith Clinical Society met in Fort Smith, October 11 under the auspices of the Clinical Staffs of St. Edwards Mercy and Sparks Memorial Hospitals.

Dr. C. B. Callen, Fayetteville, has returned after taking postgraduate work in New Orleans.

Dr. E. R. Barrett, Jonesboro, has been taking postgraduate work in Nashville.

Dr. Thomas Virgil Banks and Miss Stella Jane Hulen, both of Hughes, were married in September.

Deaths

Dr. Joseph Lowery Baird, Marked Tree, aged 55, died October 31.

Dr. E. E. Shell, Prescott, aged 67, died recently from injuries received when struck by a bus.

Dr. Homer Scott, Little Rock, aged 57, died November 1.

Dr. Andrew J. Hamilton, Rison, aged 74, died October 31.

Dr. Orvis E. Biggs, Hot Springs National Park, aged 62, died October 17 from a heart attack.

Dr. Eugene A. Hawley, Texarkana, aged 62, died November 4 of complications resulting from an automobile accident.

Dr. Atchie M. Nicks, St. Joe, aged 75, died August 28 of valvular heart disease and arthritis.

Dr. Fred T. Jones, Little Rock, aged 61, died September 10 of septicemia.

Dr. Andrew J. Allen, Subiaco, aged 70, died September 20 of pulmonary tuberculosis.

DISTRICT OF COLUMBIA

Dr. William Clinton White, Washington, and Miss Frances Evelyn Daniel, Greenville, South Carolina, were married recently.

Dr. Davis Oscar Smith, Washington, and Miss Grace Henderson, Monroe, North Carolina, were married in September.

FLORIDA

Dr. W. C. McConnell, St. Petersburg, has been made Vice-President of the Southern Psychiatric Association.

The Florida East Coast Medical Association has elected the following officers for the coming year: Dr. Frederick J. Waas, Jacksonville, President; Dr. Thomas C. Kenaston, Cocoa, and Dr. M. Jay Flipse, Miami, Vice-Presidents; Dr. A. J. Logie, Jacksonville, Secretary-Treasurer.

Dr. J. S. Tuberville, Century, has been made Vice-President of the Gulf Coast Clinical Society.

The Pinellas County Medical Society has elected the following officers for the coming year: Dr. J. A. Herring, President; Dr. N. W. Gable, Jr., First Vice-President; Dr. C. B. Wright, Second Vice-President; Dr. W. C. McConnell, Secretary-Treasurer; all of St. Petersburg.

Dr. A. A. Beyer, Tampa, has been made President of the Association of Seaboard Air Line Railway Surgeons, and Dr. J. O. Lyell, Miami, has been made Second Vice-President.

Dr. Francis W. Glenn and Dr. G. J. Walsh, Miami, announce their association with the Tumlin Clinic.

Dr. Harrison G. Palmer, St. Petersburg, has returned after attending clinics in North Carolina and Michigan.

Dr. J. M. Bryant, Jacksonville, has returned after taking postgraduate work in New York.

Dr. Lauren Sompayrac, Jacksonville, has been taking postgraduate work in New York.

Dr. Edgar Watson, Lakeland, has been taking postgraduate work in Edinburgh and Vienna.

Dr. John J. Mullowney, Tarpon Springs, and Mrs. Esther G. Thomas were married November 1.

Deaths

Dr. T. B. Echard, St. Petersburg, aged 60, died September 24.

Dr. John Henry Mayer, Lakeland, aged 60, died September 10 of cardiac decompensation.

Dr. Julius C. LeHardy, Port St. Joe, aged 67, died September 3.

GEORGIA

Dr. Russell H. Oppenheimer, Emory University, has been made President-Elect of the Association of the American Medical Colleges.

Dr. J. W. Palmer, Ailey, has been reelected Secretary-Treasurer of the Association of Seaboard Air Line Railway Surgeons.

The Atlanta Graduate Medical Assembly will hold its second annual meeting in Atlanta, January 16-19.

Deaths

Dr. J. M. Caldwell, Augusta, aged 68, died September 16.

Dr. Daniel Paul Odom, Lyons, aged 68, died September 25.

Dr. Samuel McLean Withers, Moultrie, aged 61, died September 4.

KENTUCKY

The Kentucky State Medical Association has elected the following officers for the coming year: Dr. John W. Scott, Lexington, President-Elect; Dr. James Duffy Hancock, Louisville, Dr. Ewing L. Palmore, Glasgow, and Dr. Joseph T. Molony, Covington, Vice-Presidents; Dr. Arthur T. McCormack, Louisville, Secretary. Dr. William E. Gardner, Louisville, was installed as President.

Dr. Arthur T. McCormack, Louisville, has been made President-Elect of the Southern Medical Association.

Dr. Irvin Abell, Louisville, at a special ceremony on November 5, was presented the Laetare Medal of the University of Notre Dame, South Bend, Indiana.

Dr. Floyd K. Foley, Lexington, has been made Superintendent of the Eastern State Hospital, Lexington, to succeed Dr. James L. Vallandingham, resigned.

The Kentucky State Medical Association recently dedicated the new headquarters of the State Medical Association and the State Department of Health of Kentucky, making it a permanent memorial to Dr. Joseph N. McCormack, first Health Officer of the State.

Deaths

Dr. Joseph Ezra Wells, Cynthiana, aged 77, died September 3.

Dr. Burgoyne H. Gibson, Richmond, aged 67, died September 15 of cardiorenal disease.

Dr. Fred Siddens, Bowling Green, aged 57, died September 9 of cerebral hemorrhage.

Dr. Joseph Marvin Ferguson, South Carrollton, aged 60, died September 21.

Dr. Brown Lee Pursifull, McKee, aged 43, died September 2 of pneumonia.

LOUISIANA

Dr. Lucien A. LeDoux, New Orleans, has been appointed a member of the Council of the Southern Medical Association from Louisiana for a regular Council term of five years, the appointment having been announced recently by the President, Dr. Walter E. Vest, Huntington, West Virginia. Dr. LeDoux succeeds Dr. Arthur A. Herold, Shreveport, who, having served the constitutional limit, was not eligible for reappointment.

The New Orleans Graduate Medical Assembly will hold its second annual assembly February 6-9, 1939.

Dr. C. Gordon Johnson, New Orleans, has been made New Orleans Surgeon of the Louisiana and Arkansas Railroad.

The New Orleans Eye, Ear, Nose and Throat Club has elected the following officers for the coming year: Dr. E. Garland Walls, President; Dr. William B. Clark, Secretary-Treasurer.

The Fourth District Medical Society has elected the following officers for the coming year: Dr. Sam Kerlin, Shreveport, President; Dr. V. W. Fletcher, Ringgold, Vice-President; Dr. N. J. Bender, Shreveport, Secretary.

Dr. Joseph T. Scott, New Orleans, has been made a member of the Louisiana Society of Sons of the American Revolution.

Dr. George Hauser, New Orleans, has been appointed to serve

Continued on page 34

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For detailed information write (stating type of course wanted) to

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Continued from page 124

as City Bacteriologist to succeed the late Dr. William Henry Seemann.

Dr. George F. Roeling, New Orleans, has been made Superintendent of the City Hospital for Mental Diseases, succeeding the late Dr. L. L. Cazenavette.

Dr. Rigney D'Aunoy, Dr. Frank R. Gomila and Dr. John H. Musser have been appointed to serve on the Board of the Guidance Center of the New Orleans Institute of Mental Hygiene.

Dr. Frederick F. Boyce, New Orleans, was recently certified by the American Board of Surgery.

Dr. Jeanne Roeling-Hanley, New Orleans, was recently certified by the American Board of Otolaryngology.

Dr. James E. Bailey and Dr. Clarence P. May, New Orleans, have been appointed to the Board of the Public Welfare Department of the New Orleans Council of Parents and Teachers.

Dr. John T. O'Ferrall, New Orleans, has been made a member of the Orthopedic Council of the Committee for the Celebration of the President's Birthday for the National Foundation for Infantile Paralysis.

Dr. William Harvey Perkins, New Orleans, has been made President of the Tuberculosis and Public Health Association of Louisiana to succeed Dr. William H. Seemann, deceased.

DEATHS

Dr. Augustus Edwin Simonton, Jonesboro, aged 77, died September 12 of cerebral hemorrhage and arteriosclerosis.

Dr. Orrin Feidor Matthews, Urania, aged 58, died August 27 of pneumonia.

Dr. William Henry Seemann, New Orleans, aged 60, died November 19.

MARYLAND

Dr. Gilbert W. Benjamin, Baltimore, and Miss Doris Sundmacher, Radnor, Pennsylvania, were married recently.

DEATHS

Dr. Frank Sidle Lynn, Baltimore, aged 54, died September 26 of cerebral hemorrhage.

Continued on page 36

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Continued from page 34

Dr. Frank Robert Smith, Sr., Baltimore, aged 82, died September 26 of heart disease.

MISSISSIPPI

Dr. William H. Anderson, Booneville, has been appointed a member of the Council of the Southern Medical Association from Mississippi for a regular Council term of five years, the appointment having been announced recently by the President, Dr. Walter E. Vest, Huntington, West Virginia. Dr. Anderson succeeds Dr. Harvey F. Garrison, Jackson, who, having served the constitutional limit, was not eligible for reappointment.

The Delta Medical Society has elected the following officers for the coming year: Dr. G. Y. Gillespie, Greenwood, President; Dr. B. H. Higdon, Sunflower, President-Elect; Dr. W. W. Hall, Shelby, Dr. J. W. Barkley, Belzoni, Dr. J. C. Adams, Greenwood, Dr. U. S. Wasson, Sunflower, Dr. J. G. Archer, Greenville, Vice-Presidents; Dr. F. M. Acree, Greenville, Secretary-Treasurer.

The Clarksdale and Six Counties Medical Society has elected the following officers for the coming year: Dr. W. H. Williams, Tunica, President; Dr. N. C. Knight, Clarksdale, Secretary-Treasurer.

Dr. F. Michael Smith, Vicksburg, has been elected President of the Mississippi Public Health Association.

Dr. Albert Vernon Richmond, Lake Cormorant, and Miss Flora Wellford, Memphis, were married November 14.

DEATHS

Dr. William Roy Johnston, Natchez, aged 60, died September 6 of encephalitis lethargica and influenza.

Dr. Walter Davis Wilson, Schlater, aged 71, died September 23.

MISSOURI

Dr. Bernard J. Macauley, Poplar Bluff, has been made President of the Southeast Missouri Medical Society.

DEATHS

Dr. S. M. Sanford, Palmyra, aged 78, died September 10 from a heart attack.

Dr. William Jacob Rabenau, Springfield, aged 81, died August 26.

Dr. Howard Anderson McCordock, St. Louis, aged 43, died November 13 of aortic stenosis.

Dr. Charles Vilas Martin, Maryville, aged 59, died September 25.

Dr. John Charles Lynch, Kansas City, aged 69, died September 15 of coronary thrombosis.

Dr. Nelson Potter, St. Louis, aged 75, died September 6 of uremia.

Dr. John Walton Shultz, Kansas City, aged 79, died September 16 of chronic myocarditis, cystitis and arteriosclerotic nephritis.

Dr. John Peyton Foster, La Crosse, aged 74, died September 29 of acute dilatation of the heart, arteriosclerosis and nephritis.

Dr. Napoleon B. Winfrey, Kansas City, aged 80, died September 10 of chronic myocarditis and nephritis.

Dr. Waldemar Ude, St. Louis, aged 67, died September 17.

Dr. John W. Vaughan, St. Louis, aged 81, died September 11 of pneumonia.

Dr. Arthur Aldridge, Richmond Heights, aged 88, died September 24 of bronchopneumonia, uremia, chronic myocarditis, arteriosclerosis and nephritis.

Dr. John Francis Morgan, Joplin, aged 83, died September 2 of cerebral thrombosis and arteriosclerosis.

Dr. Otto L. Sahlender, St. Louis, aged 68, died September 8 of carcinoma of the stomach and pulmonary tuberculosis.

Dr. Wallace E. Steele, Carthage, aged 84, died September 12 of chronic myocarditis and angina pectoris.

Continued on page 38

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Continued from page 36

NORTH CAROLINA

Dr. J. O. McClellan, Maxton, has been made First Vice-President of the Association of Seaboard Air Line Railway Surgeons.

The North Carolina Eye, Ear, Nose and Throat Society has elected the following officers for the coming year: Dr. Franklin C. Smith, Charlotte, President; Dr. Henry H. Briggs, Jr., Asheville, Vice-President; Dr. Milton R. Gibson, Raleigh, Secretary.

The Robeson County Medical Society has elected the following officers for the coming year: Dr. John Knox, Lumberton, President; Dr. L. R. Hedgpeth, Lumberton, Prisedent-Elect; Dr. R. D. Croom, Jr., Maxton, Vice-President; Dr. W. C. Hedgpeth, Lumberton, Secretary-Treasurer.

Duke University School of Medicine, Durham, has made the following appointments to the Faculty of the School of Medicine: Dr. Harold W. Brown, Professor of Preventive Medicine and Public Health, Dr. James P. Hendrix, Associate in Medicine; Dr. Hans Neurath, Associate in Biochemistry.

Dr. Seavy Highsmith, Fayetteville, has been made President of the Fifth District Medical Society.

Dr. David E. Plummer, Mocksville, has been placed in charge of a venereal disease clinic in Durham.

Dr. C. Graham Reid, Charlotte, has opened offices on West Seventh Street for the practice of internal medicine.

Dr. Channing Glenn, formerly of Petersburg, Virginia, has located in Elizabethtown, where he is associated with Dr. E. C. Bennett.

Dr. Frederick Klenner, Winston-Salem, and Miss Annie Sharp were married October 12.

Dr. Glenn Souders Edgerton, Kenly, and Miss Sylvia Steele, Statesville, were married October 21.

Dr. A. Fraser Lapsley, Badin, and Miss Janie Hall, Elkin, were married November 12.

Dr. Paul H. Rhodes, Albemarle, and Miss Ruth Draper, Belmont, Massachusetts, were married August 13.

DEATHS

Dr. Holman Bernard, Pilot Mountain, aged 50, died October 25 of pneumonia.

Dr. John Henry Woodcock, Hendersonville, aged 65, died November 3 from a heart attack.

Dr. Humie Lee Horton, Richmond, aged 41, died October 27.

Dr. Leonard A. Muns, Smithfield, aged 76, died August 30 of a fracture of the hip and pneumonia.

Dr. Edward Levis Prizer, Southern Pines, aged 53, died September 7 of hypertrophic arthritis, chronic nephritis and uremia.

Dr. John Thomas Anderson, Chadburn, died September 8 of cerebral hemorrhage and hypertension.

OKLAHOMA

Dr. R. M. Anderson, Shawnee, has been appointed a member of the Council of the Southern Medical Association from Oklahoma for a regular Council term of five years, the appointment having been announced recently by the President, Dr. Walter E. Vest, of Huntington, West Virginia. Dr. Anderson succeeds Dr. W. K. West, Oklahoma City, who, having served the constitutional limit, was not eligible for reappointment.

Dr. William H. Kaeiser, McAlester, has been made County Health Superintendent for Pittsburg County.

Dr. Frederick E. Dargatz, formerly of Kinsley, Kansas, has been made Director of the Ardmore Health Unit, succeeding Dr. Richard M. Paris.

Dr. Reed Wolfe, Sulphur, has been made Choctaw County Health Superintendent.

Dr. Elton Lehew, Pawnee, has moved from the First National Bank Building to the LeHew Building.

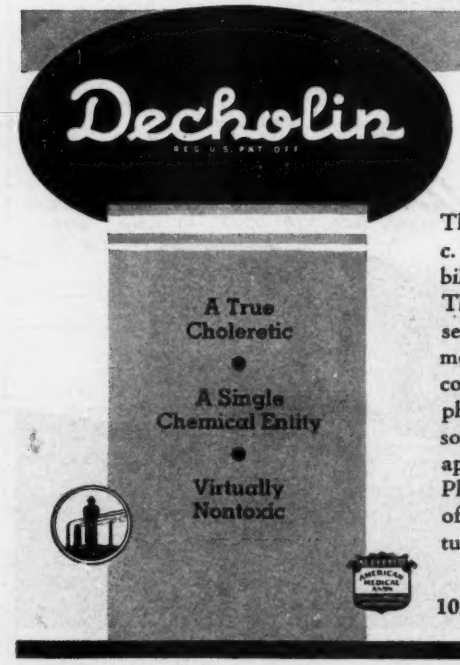
Dr. A. C. Abernethy, Altus, has been made Head of the Urology Department of the Canacao Hospital, Philippine Islands, and sailed October 17.

Dr. Patrick Nagle, Oklahoma City, has opened offices on North Lee Street for the practice of general surgery, plastic surgery and industrial surgery.

DEATHS

Dr. Lealon Edward Lamb, Clinton, aged 37, died October 7.

Continued on page 40



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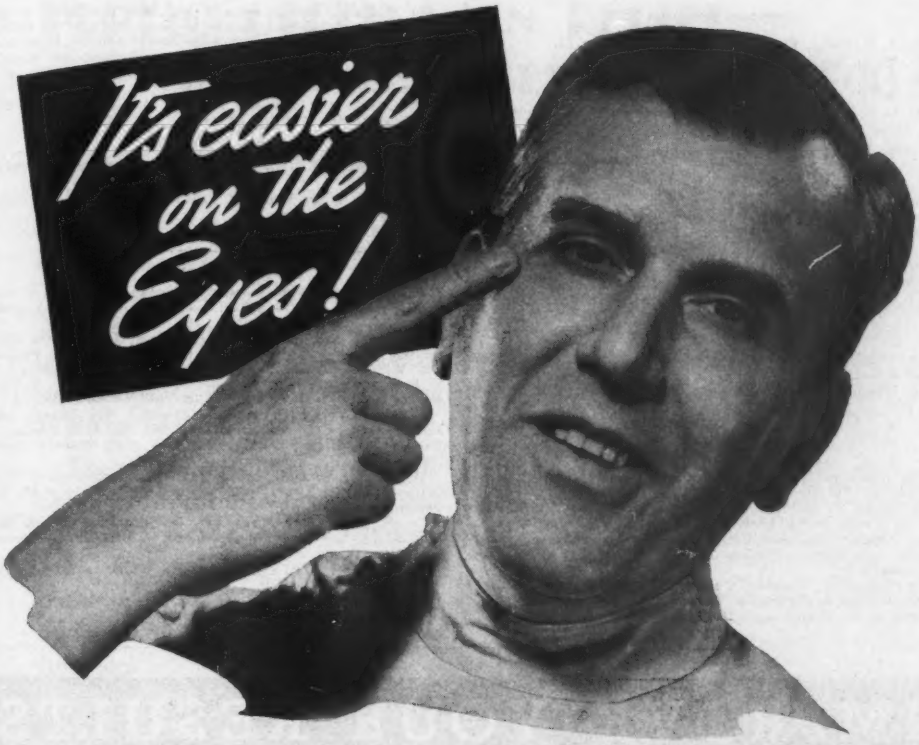

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Continued from page 38

Dr. J. H. Colby, Purcell, aged 71, died October 12.

Dr. W. L. Kendall, Enid, aged 61, died October 12.

Dr. A. F. Padberg, Canton, aged 63, died October 12.

Dr. W. L. Knight, Wewoka, aged 57, died October 18.

Dr. C. E. Smith, Enid, aged 72, died September 10 of prostatitis and urinary calculi.

SOUTH CAROLINA

Dr. J. C. Sease, Newberry, has been made President of the Kiwanis Club of that city.

Dr. John W. Varner, Kingstree, has been made a member of the Board of the Kiwanis Club of Kingstree.

Dr. W. Atmar Smith, Charleston, has been made Vice-President of the South Carolina Tuberculosis Association.

Dr. Joe E. Freed, Columbia, and Miss Kathrine Werts, Prosperity, were married November 10.

Deaths

Dr. Jonathan Dawson Waters, Saluda, aged 71, died September 23 of nephritis.

Dr. James Ernest Daniel, Greenville, aged 55, died September 24.

TENNESSEE

The Mid-South Post-Graduate Medical Assembly will hold its annual assembly at Memphis, February 14-17.

Dr. Waller S. Leathers, Nashville, has been made Secretary of the Association of the American Medical Colleges.

Dr. Malcolm T. Tipton, Union City, has been made a member of the State Board of Medical Examiners, succeeding Dr. Marcus G. Spingarn.

Dr. Leonard E. Ragsdale, formerly Superintendent of the State Home for the Feebleminded, Donelson, has been made Superintendent of the Central State Hospital for the Insane, Nashville.

Dr. James C. Repass, formerly of Lumberport, West Virginia, has moved to Dyersburg, where he will have charge of the Pediatric Division of the Clinic of the Baird-Brewer General Hospital.

Dr. James B. Tucker, formerly of Rutherford, has moved to Bentonville, Arkansas, where he will be Medical Director of the Benton County Health Unit.

Dr. Joseph M. Chisholm, Brighton, and Miss Frances Scott, Fayetteville, were married recently.

Deaths

Dr. Harold David Haney, Western State Hospital, aged 29, died September 13.

Dr. James Ashley Mourfield, Lenoir City, aged 83, died September 16 of heart disease.

TEXAS

The International Post-Graduate Medical Assembly of Southwest Texas will hold its annual assembly at San Antonio, January 24-26.

The Texas Surgical Society has elected the following officers for the coming year: Dr. A. L. Hathcock, Palestine, President; Dr. William L. Crosthwaite, Waco, First Vice-President; Dr. E. P. Bunkley, Stamford, Second Vice-President; Dr. C. B. Carter, Dallas, Treasurer; Dr. R. J. White, Fort Worth, Secretary.

The Malone and Hogan Clinic-Hospital, Big Springs, owned and operated by Dr. P. W. Malone and Dr. J. E. Hogan, was formally opened on Sunday, Devember 4, after extensive remodeling.

Dr. W. L. Barnard, Carrizo Springs, has been made Health Officer of Dimmit County to serve the unexpired term of Dr. B. E. Pickett, resigned.

Dr. H. J. Germany, Waco, has been made City Health Officer of that city to succeed Dr. George M. Liddell, who has returned to private practice.

Dr. James R. Jeter, Dallas, and Miss Antonette Thomas, Ennis, were married October 20.

Continued on page 42

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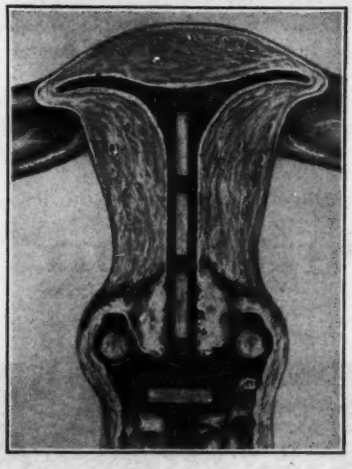

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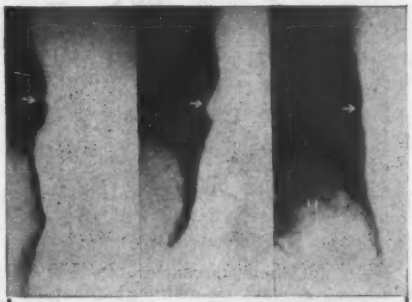
A simple formula for the preparation of concentrated Knox Gelatine feedings, useful in peptic ulcer is, stir quickly one envelope (approximately 8 grams) of Knox Gelatine in ¾ of a glassful of drinking water and have patient drink quickly before it "sets" or gets lumpy.



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Continued from page 40

Dr. Bob Barker, Fort Worth, has been made part time County Health Officer to succeed Dr. C. W. Kelley, who is now with the City Health Department.

Dr. R. O. Peters, Sweetwater, has been made a member of the Sweetwater Hospital Board, succeeding the late Dr. A. A. Chapman.

Dr. John Humphries, Palestine, has been made Health Officer of that city.

Dr. W. S. Wyson, McKinney, has returned after attending clinics in the East and Midwest.

Dr. D. L. Curb has moved from Galveston to Philadelphia, Pennsylvania.

Dr. U. J. Dowling has moved from Houston to Hamlin.

Dr. Theron H. Funk has moved from Weatherford to Fort Worth.

Dr. Thomas C. Gentry has moved from Hamlin to Denver, Colorado.

Dr. L. D. Hancock has moved from Port Lavaca to Houston.

Dr. Charles M. Hoch has moved from Loving to Stamford.

Dr. Joseph M. Loewenstein has moved from Lovelady to Port Arthur.

Dr. J. E. Manney has moved from Waco to Mathis.

Dr. W. N. Powell has moved from Temple to Rochester, Minnesota.

Dr. F. E. Rushing has moved from Morton to Lubbock.

Dr. J. H. Walker has moved from Borger to Fort Sill, Oklahoma.

Dr. A. S. Brussel has moved from Houston to Corsicana.

Dr. J. R. Carroll has moved from Claude to Amarillo.

Dr. Frank S. Griffin has moved from Jacksonville to Liberty.

Dr. J. L. Patteson has moved from Angleton to Houston.

Dr. B. A. Prestridge has moved from Olton to Plainview.

Dr. George A. Wilhite has moved from Corsicana to Safford, Arizona.

Dr. John W. Garnett, Jr., Fort Worth, and Miss Edna Whitehurst were married recently.

Dr. Robert Nelson Smith, Comanche, and Miss Elizabeth Ada Lambert, Montclair, New Jersey, were married September 24.

Dr. George Young Siddons, Fort Worth, and Miss Virginia Lewis, Hillsboro, were married October 16.

Dr. Albert D'Errico, Dallas, and Miss Carol Whitney Van Etten, New York, were married October 18.

Continued on page 44

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The Surgeon—
The Anesthetist—
The Hospital Management—

Will be pleased with the high purity of "PURITAN MAID" CYCLOPROPANE, the excellent results obtained from its use, and the economies effected in the cost of anesthesia. We sincerely urge and invite comparison of our product with any other brand.

A SAFETY FEATURE—

While Cyclopropane itself is a low-pressure gas, it is used often on gas machines opposite high-pressure gas cylinders. The cylinders in which it is marketed, for this and other reasons, should be just as strong as the rest of the system. Don't be misled into the use of cheap light-weight cylinders for this important gas. Consult your insurance engineer and be safe. We use as strong cylinders for Cyclopropane as for any other gas.

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Cyclopropane
Nitrous Oxid
Ethylene

PURITAN MAID
TRADE MARK REG.

Oxygen
Carbon Dioxid
Helium

Equipment for the Administration of Helium Gas Mixtures; also Apparatus for the Subcutaneous Injection of Oxygen.

Manufacturers and Distributors—Oxygen Tents, Nasal Catheter Units, Bedside Inhaling Outfits, Anesthetic Gas Machines, Resuscitators and Inhalators, Soda Lime.

Continued from page 42

DEATHS

Dr. A. C. Connor, Lexington, aged 79, died September 8 of arthritis.

Dr. William Townsend Dunning, Gonzales, aged 53, died September 3 of coronary thrombosis.

Dr. William Simeon Miller, Estelline, aged 79, died August 18 of heart disease.

Dr. Joseph Welch Scott, Houston, aged 74, died September 11 of pneumonia.

Dr. Edward Carroll Brannon, Waco, aged 56, died recently.

Dr. Henry Otto Wyneken, San Antonio, aged 52, died September 14 of pulmonary embolism.

Dr. Johnston Frank, Dallas, aged 81, died September 29.

Dr. Hugh C. Cunningham, Roganville, aged 76, died recently.

Dr. John Warren Germany, Ennis, aged 71, died September 23 of coronary thrombosis.

Dr. R. P. Bishop, Channing, aged 68, died September 23.

Dr. Otto Jack Knolle, Fayetteville, aged 60, died September 1 of chronic myocarditis.

Dr. Hugh Brown Todd, Houston, aged 71, died September 14 of coronary occlusion.

Dr. Richard Lee Smith, Waco, aged 74, died September 28 of uremia.

VIRGINIA

The Medical College of Virginia, Richmond, on December 1 celebrated the one hundred and first anniversary of its founding with Founders' Day exercises.

The Northern Neck Medical Association has elected the following officers for the coming year: Dr. Charles Y. Griffith, Machodoc, President; Dr. C. Leonard Booker, Lottsburg, Dr. M. C. Oldham, Kilmarnock, Vice-Presidents; Dr. Lee S. Liggan, Irvington, Secretary-Treasurer.

Dr. James Walter White, Jr., has located in Lu ay for the general practice of medicine and surgery.

Dr. James E. Smith, Petersburg, has been made City Physician to succeed Dr. Channing Glenn, who has moved to North Carolina.

Continued on page 46

ORALLY OR BY INJECTION

Metrazol Tablets, Oral Solution and Powder for prescription compounding.

COUNCIL ACCEPTED

For circulatory and respiratory support in the emergencies of congestive heart failure or pneumonia prescribe Metrazol, tablets or in solution, three or four times a day. In extreme cases oral administration may be supplemented by injection.

DOSE: 1½ to 4½ grains (1 to 3 tablets, or 1 to 3 cc. oral or parenteral solution).

BILHUBER-KNOLL CORP. - ORANGE, NEW JERSEY

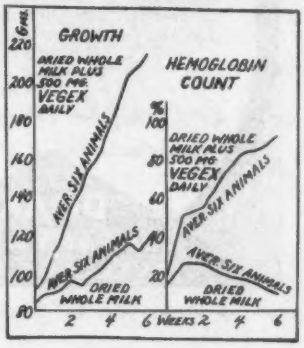
VEGEX
BREWERS YEAST EXTRACT
VITAMIN B COMPLEX
EXTRINSIC FACTOR
MARMITE

Dependable For The B Complex And Iron Reinforcement Of Milk

In 1920 (Journal Biological Chemistry, Vol. 41, No. 4, April, 1920) Osborne and Mendel state:

> "The inferiority of 15 c. c. of the fresh unpasteurized summer milk as a source of water soluble vitamin, in contrast with 0.2 gm. of dried brewers' yeast is indicated by the more rapid gains made by all the animals. The consequences of this relative poverty of milk soluble vitamin for the artificial feeding of infants have already been referred to by us."

Vegex, the condensed whole extract from enzymatic autolyzed yeast, supplies the vitamin B factors and water soluble minerals and proteins in more readily available, palatable and easily borne form. For this reason it has been widely chosen, and its name appears so much in the literature of medical and nutritional research.



In the Newer Knowledge of Nutrition, 1923, McCollum and Simmonds say:

> "Possibly milk is lacking in both quantity and quality in substances necessary for adolescent growth and reproduction. The growth of rats on this ration and also on 5 per cent of yeast was normal."

NOT "POSED MODELS"

Five per cent of Vegex with dried whole milk does this job. The animals shown here are not "posed models" but an actual photograph of a male and female taken from a litter in the third generation fed with dried whole milk, five per cent of Vegex and water as the sole diet.

Our laboratories have not had full growth, nor reproduction with dried whole milk as the sole diet and, in all cases, there is a low red blood cell count. The chart shows the growth curves using dried whole milk with and without Vegex, and the red blood cell counts. These curves and photographs cannot but compel attention.

CHILD CLINICAL USE

Vegex has been widely used since the first reported use by Pritchard (Physiological Feeding of Infants and Children, 1922) in work to find the relation of the vitamin B complex to the appetite and growth of children and particularly to the promotion of lactation.

It would seem that Vegex not only makes the "quart of milk a day" into a better food but the experience is that Vegex markedly helps to get the consumption of a "quart of milk a day."

Samples for clinical or professional use will be sent on request

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DIASPORAL
DOAK

"SULFUR-DIASPORAL"

"Original Colloidal Sulfur For Intravenous and Intramuscular Administration".—

"The early administration of Colloidal Sulphur in cases of acute and chronic arthritis is of importance to prevent unnecessary suffering, prolonged invalidism and deformities."
—S. C. Woldenberg, M.D.
Jl. Bone and Joint Surgery, October, 1937.

Reprints on request
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DOAK
COMPANY, INC.
CLEVELAND, OHIO

Continued from page 44

Dr. Elmer N. Schokley, formerly of Bassetts, has moved to Ashburn.

Dr. Thomas Wheeldon, Richmond, has been made a Fellow in the Society for Physical Medicine.

Dr. C. L. Outland, Richmond, has been made President-Elect of the American School Health Association.

Dr. Paul W. Bowden has been made Assistant Health Officer of Arlington County to succeed Dr. Edwin V. Jones, Jr., resigned.

Dr. J. L. Hundley, formerly of Wytheville, is now Assistant Resident with Dr. D. C. Smith in the Department of Dermatology and Syphilology at the Universiy of Virginia Hospital, Charlottesville.

Dr. Earle C. Gates, Bristol, has been made Health Officer of the Washington-Bristol Health Department.

Dr. John G. McNeil, St. Charles, has been made Health Officer of the Montgomery County Health District to succeed Dr. William W. Fuller.

Dr. Willard W. Griggs, St. Charles, has been made Health Officer of the Dickenson-Wise Counties District to succeed Dr. George R. Carpenter.

Dr. Eugene B. Shepherd, Chatham, has been made Health Officer of the Pittsylvania County District to succeed Dr. Benjamin Randolph Allen.

Dr. Stephen J. Beeken, Lexington, has been made Health Officer of the Russell-Tazewell District, succeeding Dr. Vernon A. Turner.

Dr. W. E. Vermilya, formerly of Big Rock, has moved to Clifton Forge.

Dr. Marion S. Love, formerly of Washington, D. C., has located in Charlottesville, where he is connected with the Department of Neurology and Psychiatry at the University of Virginia School of Medicine.

Dr. Edward Valentine Jones, formerly at Arlington, has moved to Logan, West Virginia.

Dr. Henry Clay Smith, Boyce, and Mrs. Mary Martin Singer were married October 25.

Dr. George Cooper, Jr., Charlottesville, and Miss Juliet Foster Paine were married November 24.

Continued on page 48

Diagnosis: Fat or Sugar Intolerance

Indicated: Dryco Feedings

Prognosis: Good .

WHEN one of your babies fails to tolerate fat or sugar, you naturally seek to reduce the offending component in the formula.

But... the problem remains to supply adequate protein for growth.

And that problem, we think you'll agree, is solved admirably in Dryco feedings. Fed *without* sugar, the Dryco formula offers the infant:

1.3% fat	5.1% lactose
3.5% protein	0.8% minerals

Furthermore the curd formed is soft, flocculent, and readily tolerated by weakened digestive systems.

DRYCO

REDUCED PRICES

ORETON · PROLUTON

ORETON—Schering's pure crystalline male sex hormone preparation (testosterone propionate). Prices substantially reduced.

Oreton is indicated for the treatment of benign prostatic hypertrophy, symptoms of the male climacteric, hypogonadism, and impotence, when these conditions are traceable to male sex hormone deficiency. Certain gynecological disorders, such as selected cases of menorrhagia and dysmenorrhea, have also responded to *Oreton* therapy.

Oreton is supplied in ampules of sesame oil solution, 1 cc. size, 5, 10, and 25 mg. concentrations; boxes of 3, 6, and 50 ampules.

PROLUTON—Schering's pure crystalline corpus luteum hormone (progesterone). Prices reduced 33⅓% by increasing package size.

Proluton is indicated in threatened and habitual abortion, menorrhagia and metrorrhagia, dysmenorrhea with normal uterine development, premenstrual tension, when these conditions are traceable to corpus luteum hormone deficiency.

Proluton is supplied in ampules of sesame oil solution, 1 cc. size, ½, 1, 2, and 5 mg. concentrations, boxes of 6 and 50; 10 mg. strength, boxes of 3.

FOR ADDITIONAL INFORMATION ON ORETON* AND PROLUTON* PLEASE ADDRESS THE MEDICAL RESEARCH DIVISION

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HORMOTONE "T"

makes available the therapeutic effect of standardized follicular hormones by oral administration, combined with the well known Hormotone endocrine formula. Each tablet contains ovarian follicular hormones therapeutically equivalent to 200 units (international assay). It is Enterosol Coated to prevent any destructive action of the digestive processes of the stomach.

Amenorrhea Menopause
Irregular Menstruation

Bottles of 40 tablets

G. W. Carnrick Co.

20 Mt. Pleasant Ave.,
Newark, New Jersey

Continued from page 46

Dr. Ernest Perry Buxton, Jr., and Miss Anna Heath Williams, both of Richmond, were married November 5.

Dr. Edgar Clay Harper and Mrs. Dorothy Seaman Albright, both of Richmond, were married October 15.

Dr. William Eugene Apperson, Lynchburg, and Miss Ellen Cosby Carter, Halifax, were married October 29.

Deaths

Dr. Daniel Trigg, Bristol, aged 61, died November 4.

Dr. Ernest Coleman Levy, Richmond, aged 70, died September 29.

Dr. Hunter Boyd Spencer, Lynchburg, aged 55, died November 12.

Dr. John Webb Simmons, Martinsville, aged 79, died October 13.

Dr. Holland H. Green, Hillsboro, aged 35, died October 17 from a heart attack.

Dr. J. E. Rawls, Suffolk, aged 63, died October 14 from injuries received in an automobile accident.

Dr. Norman Walter File, Lynchburg, aged 54, died November 4 from a stroke of paralysis.

Dr. John Henry Neff, Charlottesville, aged 51, died November 8.

Dr. Philip Arlis Hilton, Waynesboro, aged 49, died September 25 of bronchopneumonia.

Dr. John Luther Nall, Danville, aged 61, died September 30 of myelogenous leukemia.

Dr. William Meredith, Beaverdam, aged 73, died September 9 of coronary occlusion.

Dr. Nathaniel D. Morton, Richmond, aged 58, died September 10 of myocarditis and arteriosclerosis.

WEST VIRGINIA

Dr. Walter E. Vest, Huntington, was elected President of the Southern Medical Association at the meeting in Oklahoma City recently.

The McDowell County Medical Society has elected the following officers for the coming year: Dr. F. E. LaPrade, Welch, President; Dr. C. C. Cochran, Kimball, Vice-President; Dr. James Vermillion, Welch, Secretary; Dr. J. K. Cooper, Premier, Treasurer.

The Potomac Valley Medical Society has elected the following officers for the coming year: Dr. V. L. Dyer, Petersburg, President; Dr. J. F. Easton, Romney, Dr. J. B. Grove, Petersburg, Dr. O. V. Brooks, Moorefield, Dr. Robert Bess, Keyser, and Dr. O. S. Reynolds, Franklin, Vice-Presidents; Dr. E. A. Courrier, Keyser, Secretary-Treasurer.

Dr. Edward Valentine Jones, Jr., formerly of Arlington, Virginia, has located at Logan, where he is associated with the Logan County Health Department.

Deaths

Dr. Lawrence Arthur Petty, Charleston, aged 52, died September 14.

Dr. Nathaniel Burwell, Shepherdstown, died September 16 of pulmonary tuberculosis.

Dr. Victor Hugo Dye, Sistersville, aged 61, died September 27 of perforated gastric ulcer and peritonitis.

SCABIES TREATMENT

Clinically Established*

NON-IRRITATING
PLEASANT ODOR
RAPIDLY EFFECTIVE

If you would like to give it a test, send 20c to cover handling and we will mail enough for one adult treatment.

**Report on 1213 cases on request*

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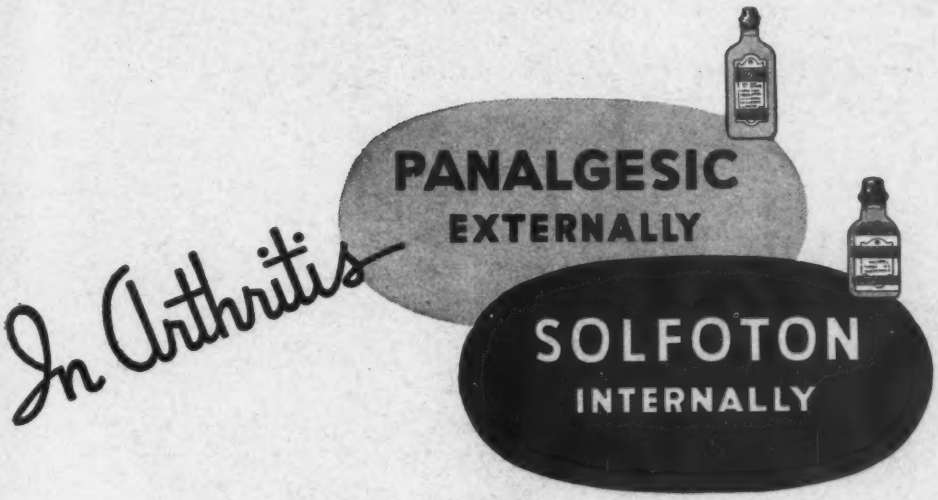
FINE DIGITALIS PRODUCTS



Many physicians have found that a combination treatment of SOLFOTON and PANALGESIC promotes speedier end results.

PANALGESIC—A liquid combination of non-toxic analgesic drugs with multiple therapeutic actions for external application—containing Camphoric Terpenes, Salicylates, Ethanol and Natural Oil.

SOLFOTON—A synergistic combination (each tablet contains Poythress Colloidal Sulfur gr. 1 and Phenobarbital gr. ¼). SOLFOTON is a detoxifier, alterative and sedative.

The combined use of PANALGESIC and SOLFOTON may effectively control the arthritis syndrome.

Issued

Panalgesic in 2 oz. and 64 oz. bottles.
Solfoton in 100 and 500-tablet bottles.

Literature and samples sent upon request

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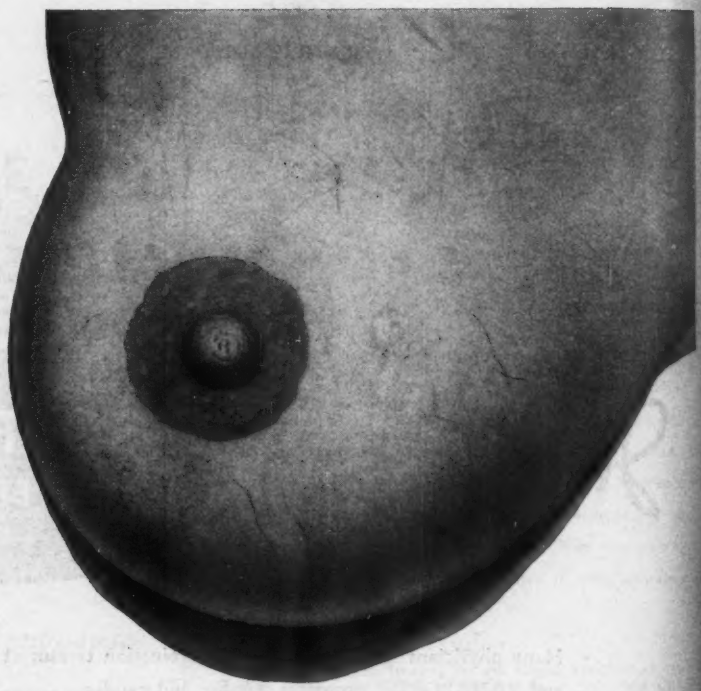
"A pair of substantial mammary glands have the advantage over the two hemispheres of the most learned professor's brain, in the art of compounding a nutritive fluid for infants."

OLIVER WENDELL HOLMES, M.D.



FIRST THOUGHT—*Breast Milk*

SECOND THOUGHT—

Cow's Milk + Water + Dextri-Maltose

THE use of cow's milk, water and carbohydrate mixtures represents the one system of infant feeding that consistently, for three decades, has received universal pediatric recognition. No carbohydrate employed in this system of infant feeding enjoys so rich and enduring a background of authoritative clinical experience as Dextri-Maltose.

DEXTRI-MALTOSE No. 1 (with 2% sodium chloride), for normal babies.
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These products are non-allergenic.

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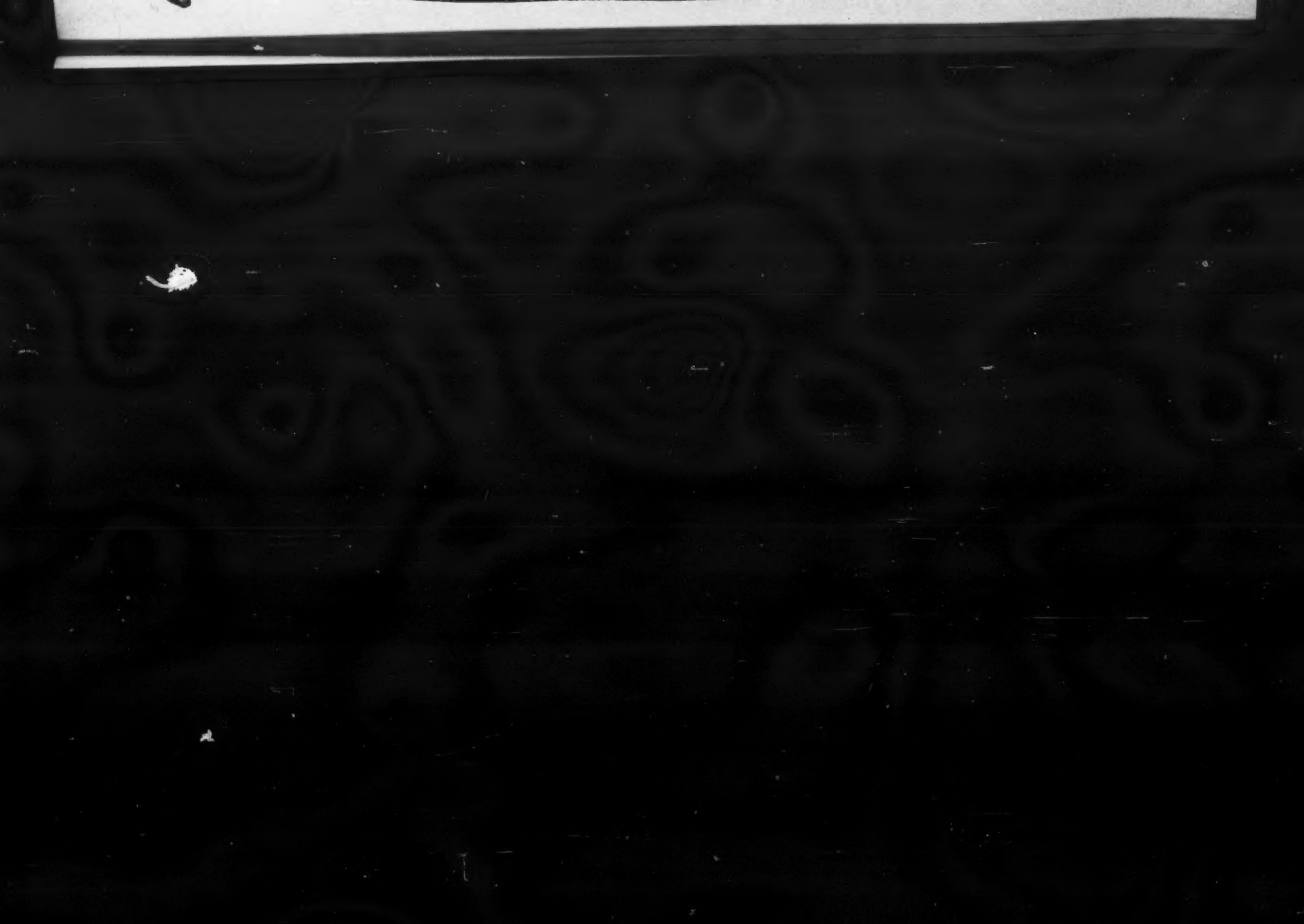

If they could talk, Council Seals would say:

"When you see one of us on a package of medicine or food, it means first of all that the manufacturer thought enough of the product to be willing to have it and his claims carefully examined by a board of critical, unbiased experts . . . We're glad to tell you that this product was examined, that the manufacturer was willing to listen to criticisms and suggestions the Council made, that he signified his willingness to restrict his advertising claims to proved ones, and that he will keep the Council informed of any intended changes in product or claims . . . There may be other similar products as good as this one, but when you see us on a package, you know. Why guess, or why take someone's self-interested word? If the product is everything the manufacturer claims, why should he hesitate to submit it to the Council, for acceptance?"

THE FOLLOWING MEAD PRODUCTS ARE COUNCIL-ACCEPTED: Oleum Percomorphum (liquid and capsules); Mead's Cod Liver Oil Fortified With Percomorph Liver Oil; Mead's Compound Syrup Oleum Percomorphum; Mead's Viosterol in Halibut Liver Oil (liquid and capsules); Mead's Cod Liver Oil With Viosterol; Mead's Viosterol in Oil; Mead's Standardized Cod Liver Oil; Mead's Halibut Liver Oil; Dextri-Maltose Nos. 1, 2, and 3; Dextri-Maltose With Vitamin B; Pablum; Mead's Cereal; Mead's Mineral Oil With Malt Syrup; Mead's Brewers Yeast (powder and tablets); Mead's Thiamin Chloride Tablets; Mead's Cevitamic Acid Tablets; Mead's Powdered Protein Milk; Mead's Powdered Whole Milk; Mead's Powdered Lactic Acid Milk Nos. 1 and 2; Alacta; Casec; Sobee; Cemac; Olac.

THE FOLLOWING NEW PRODUCT IS BEFORE THE COUNCIL ON PHARMACY FOR ACCEPTANCE: Mead's Nicotinic Acid Tablets.

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THEELIN

★ The first estrogen to be isolated in pure crystalline form

★ The first pure estrogen to be used clinically

★ The first estrogen to be reported in medical literature

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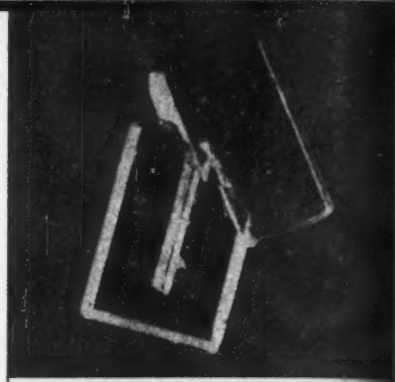

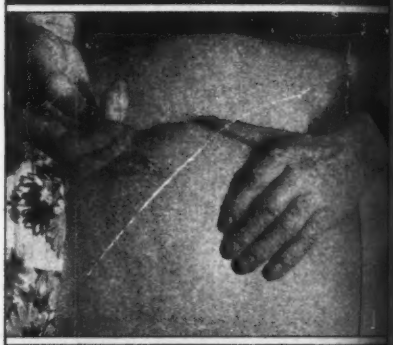

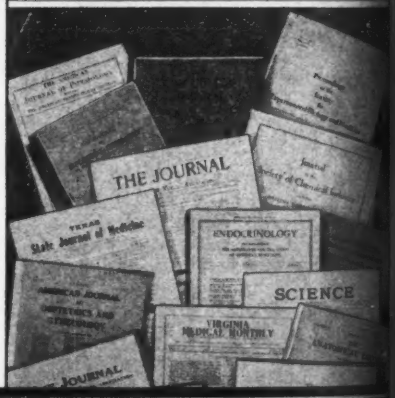

Theelin (ketohydroxyestratriene) is available as *Theelin in Oil Ampoules* in potencies of 1000, 2000, 5000, and 10,000 international units each, and *Theelin Ampoules* (Aqueous) 200 units—supplied in boxes of six and fifty 1-cc. ampoules. *Theelin Vaginal Suppositories*, 2000 international units each, are supplied in boxes of six. Theelol (trihydroxyestratriene) is available as *Kapseals Theelol* in two strengths, 0.06 milligram and 0.12 milligram—supplied in bottles of 20, 100, and 250.

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